



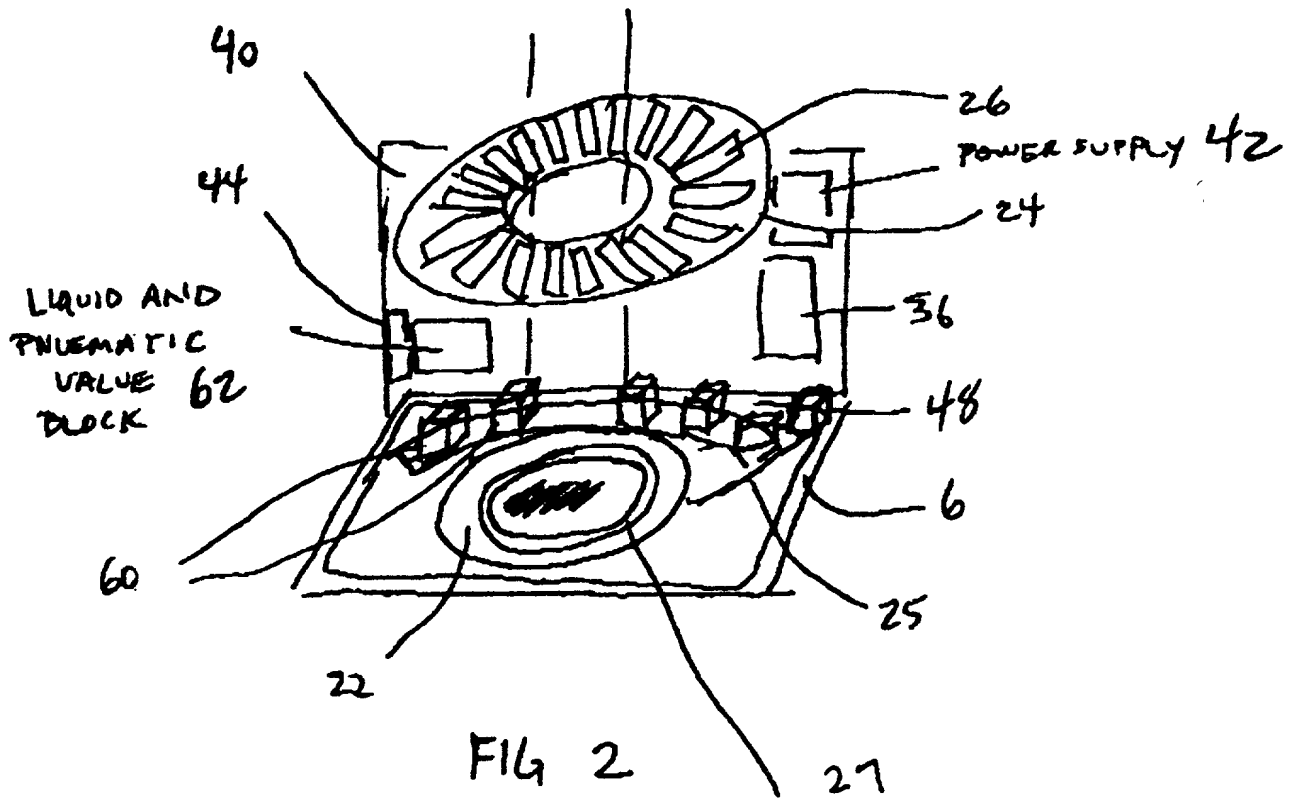
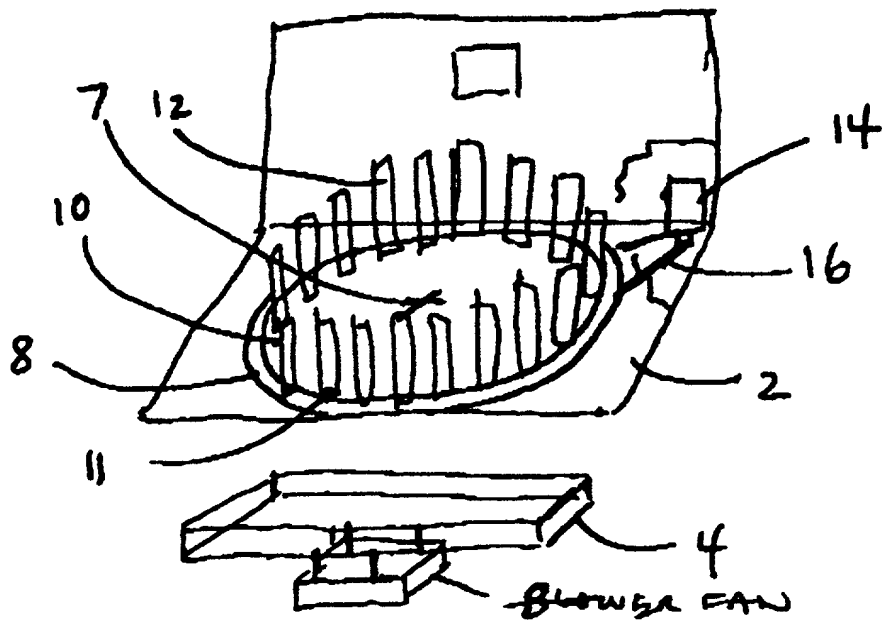
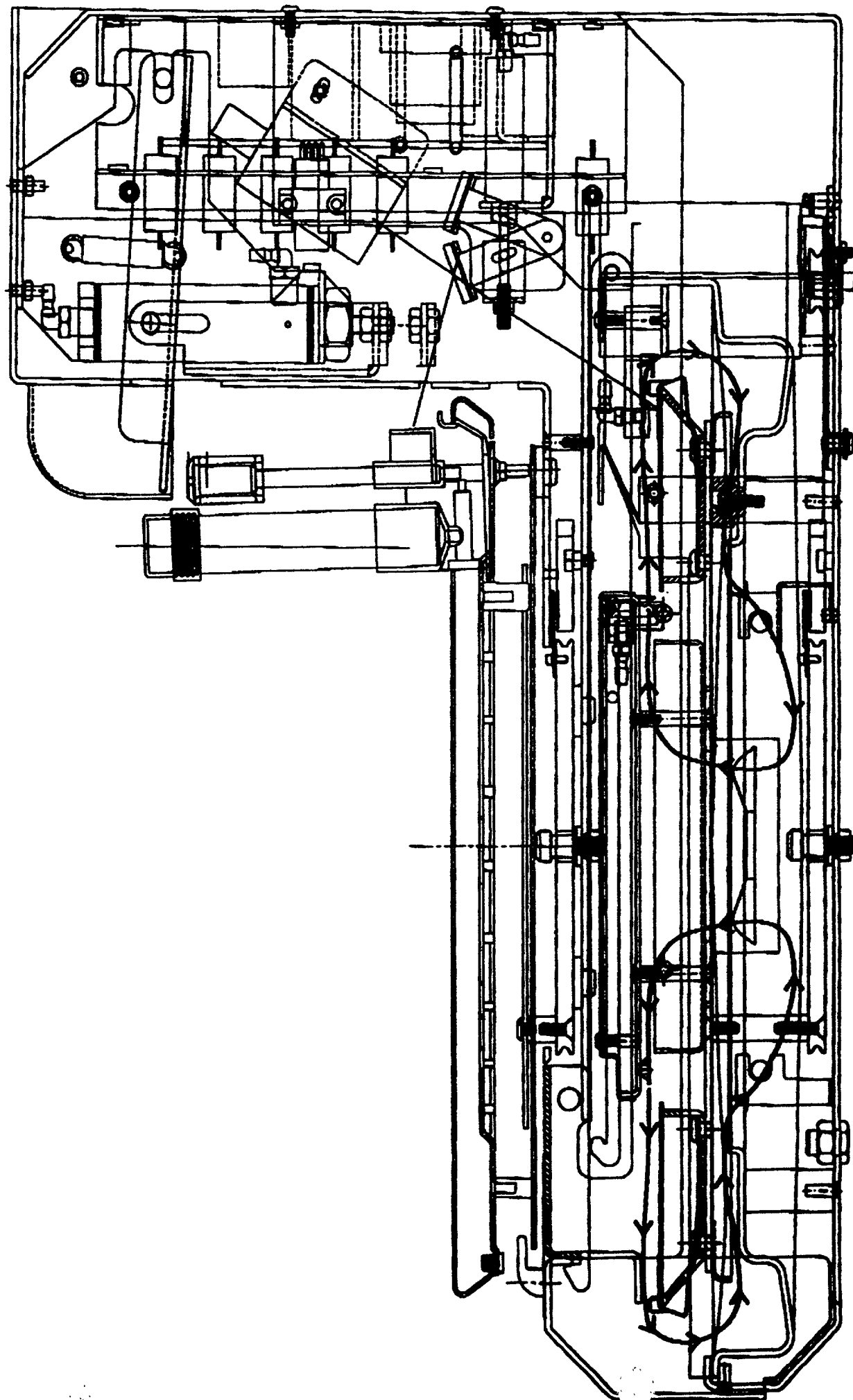
[illegible]

FIG 2

FIG 3



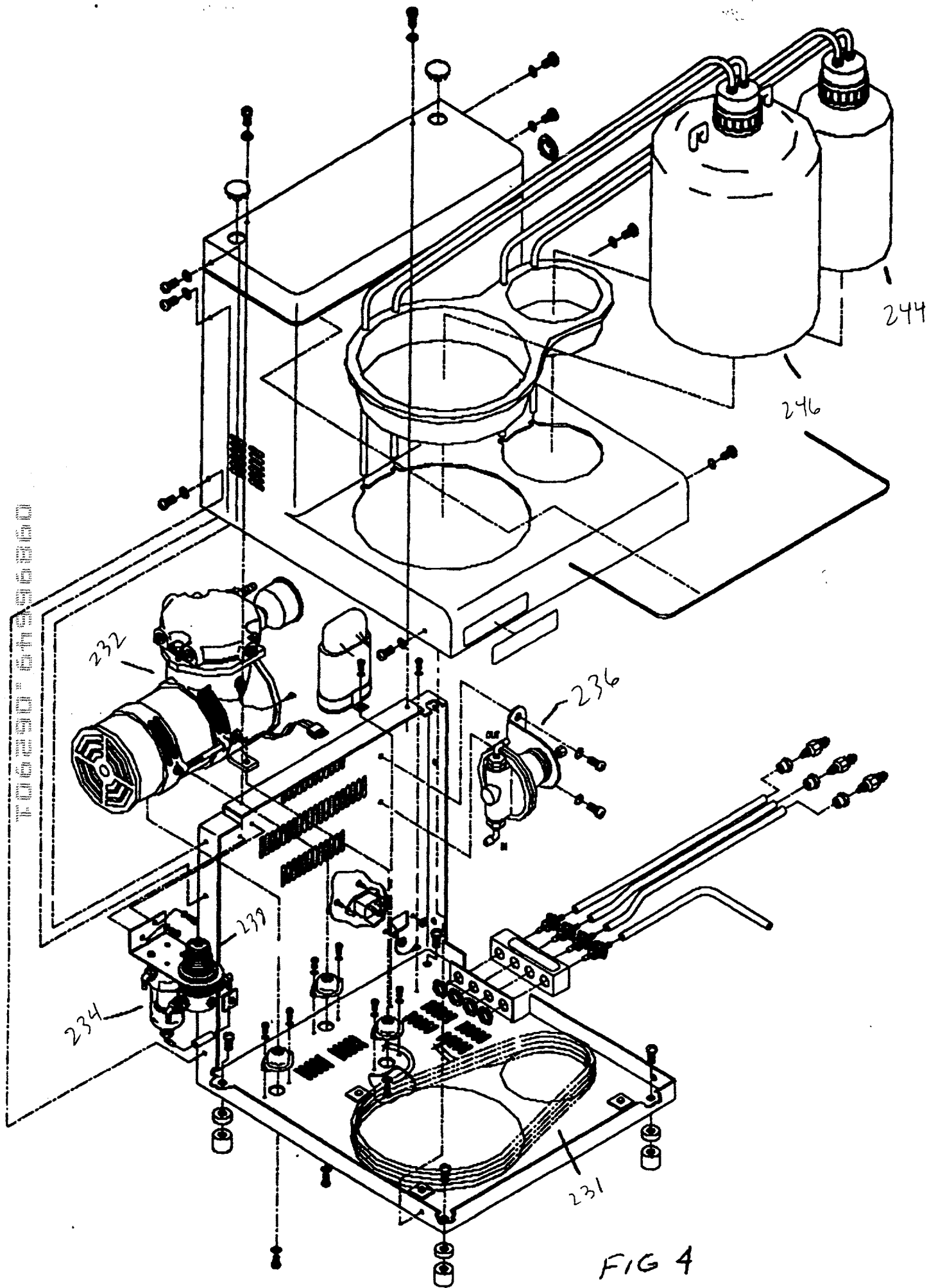


FIG 4

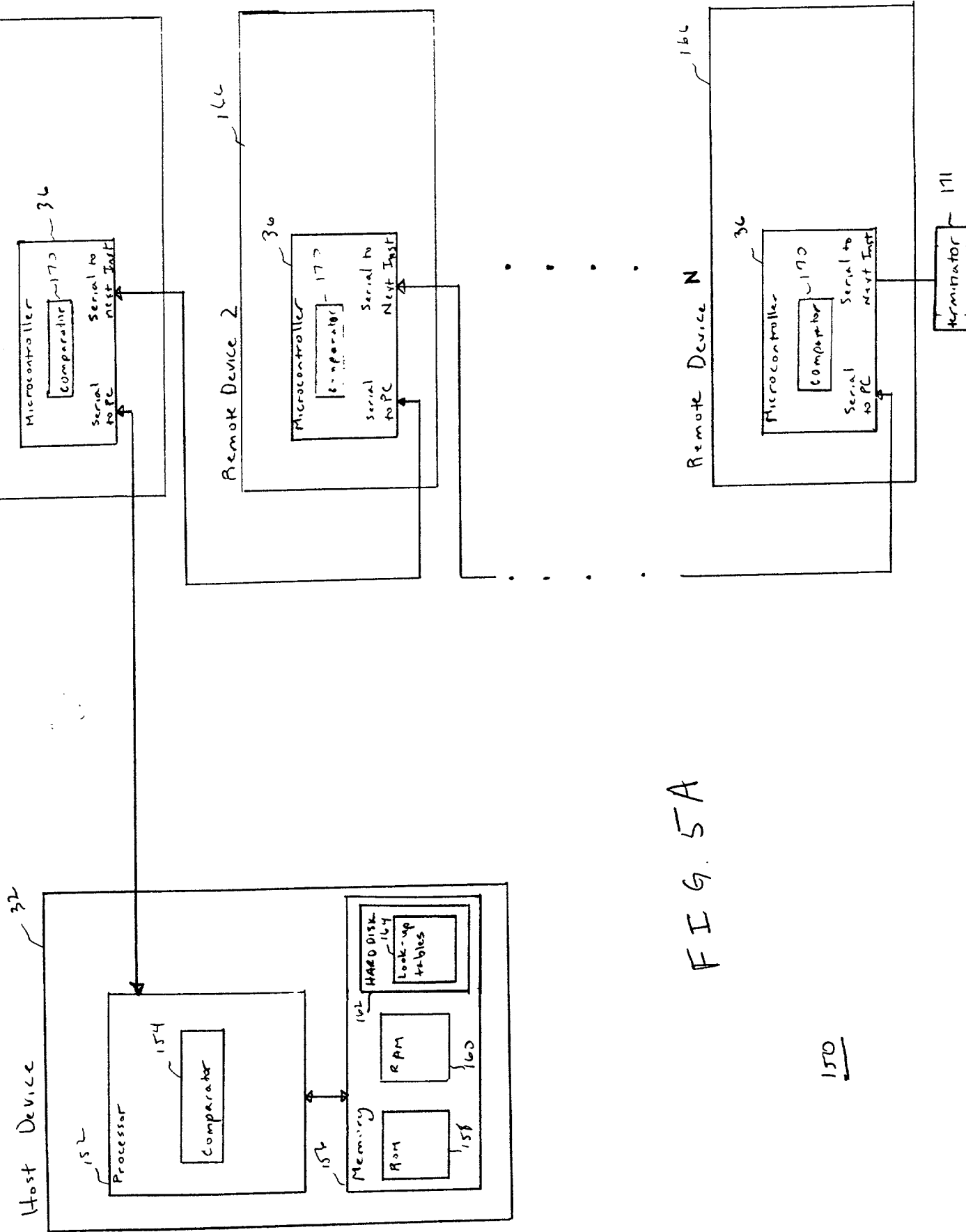


FIG. 5A

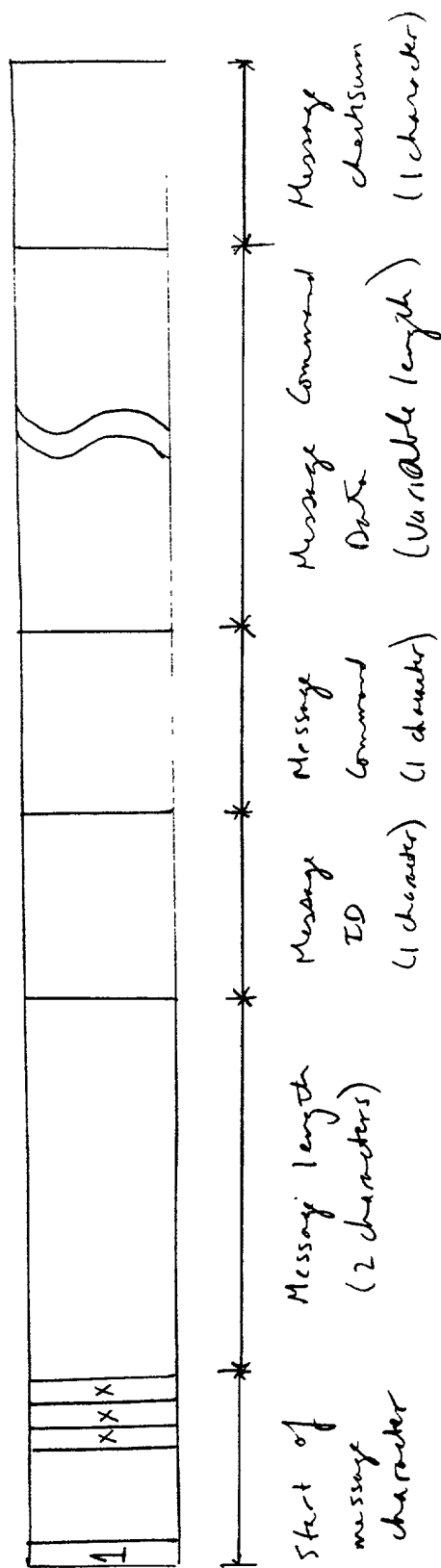


FIG. 5B

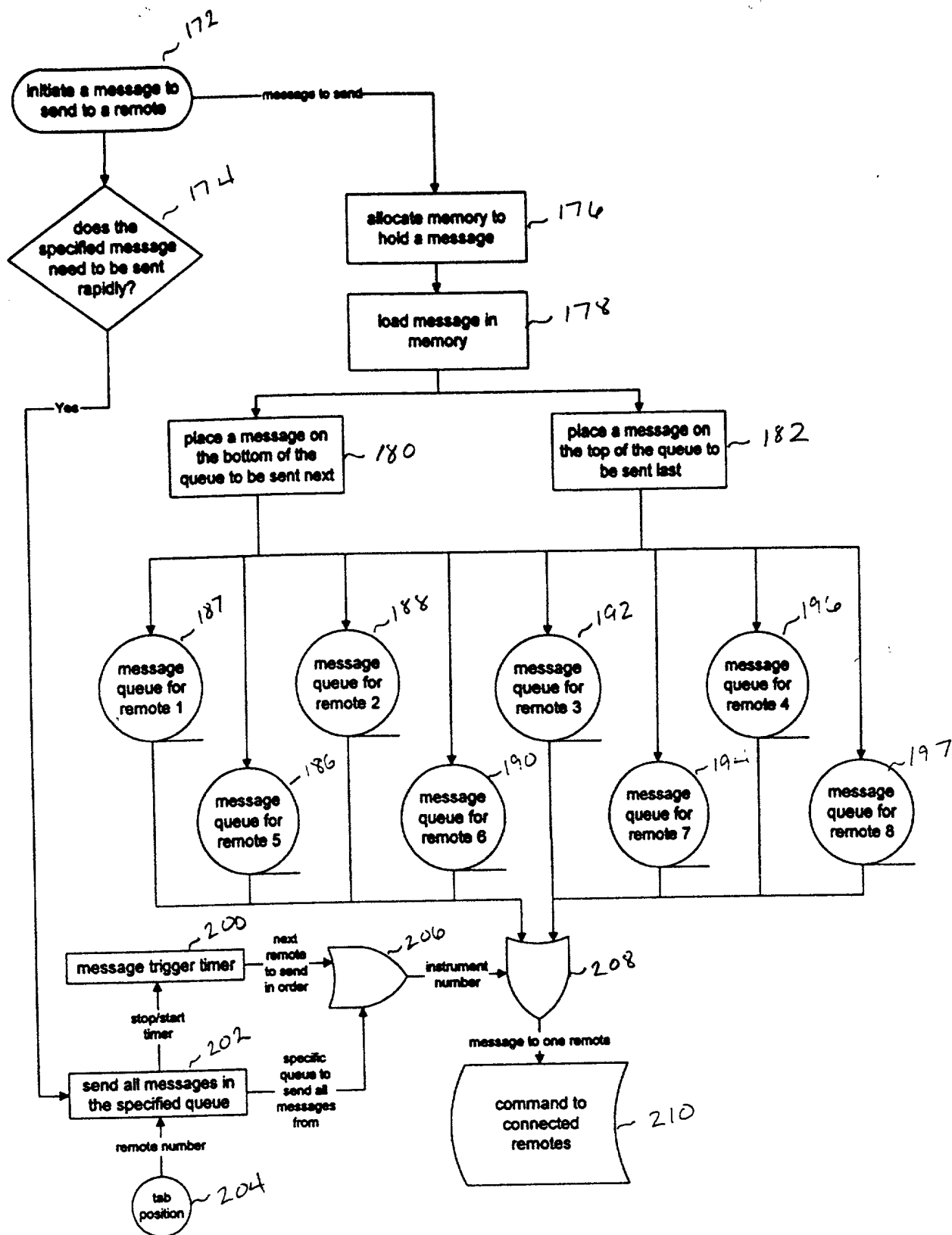


FIG 5C

The diagram illustrates a complex laboratory instrument system, likely a robotic liquid handler, designed for automated sample processing. The system is divided into several main functional modules:

- Staining Module (167):** Located at the top left, it contains four solenoid valves (249A, 248B, 248C, 248D) for dispensing different reagents. It also includes a bar code reader (276) and a motor (274) for a reagent carousel (280).
- Bulk Fluid Module (230):** Located at the bottom left, it manages the main fluid supply. It includes a compressor (232), a filter (234), a regulator (234), and a pump (238) to circulate fluid through various reservoirs (242, 244) and filters (240, 246).
- Microcontroller (36):** The central brain of the system, it receives input from various sensors and sends control signals to actuators. It manages the carousel rotation, valve opening, pump operation, and heater activation.
- Sample and Reagent Handling:** Two carousels are present: a **Reagent Carousel (280)** for dispensing reagents and a **Slide Carousel (271)** for holding sample slides. Both are equipped with sensors (278, 282) and motors (274, 286).
- Fluid Management and Monitoring:** The system includes multiple valves (248E-I, 250-258) for precise fluid control. It also features a **Slide Heater (302)** to maintain sample temperature, a **Slide Heater (251)** for the carousel, and a **Slide Heater (255)** for the sample tube. A **Slide Heater (251)** is also shown for the carousel.
- System Integration and Safety:** The microcontroller is connected to a **34 Volt Power Supply (42)**, a **Pressure Sensor (290)**, and a **Status PCB (294)**. It also controls a **Slide Switch and Lens (295)** and a **Slide Heater (292)**.

The diagram uses standard electrical and fluidic symbols to represent components and their interconnections, providing a detailed view of the system's architecture and component layout.

FIG. 6A



106290-0196860

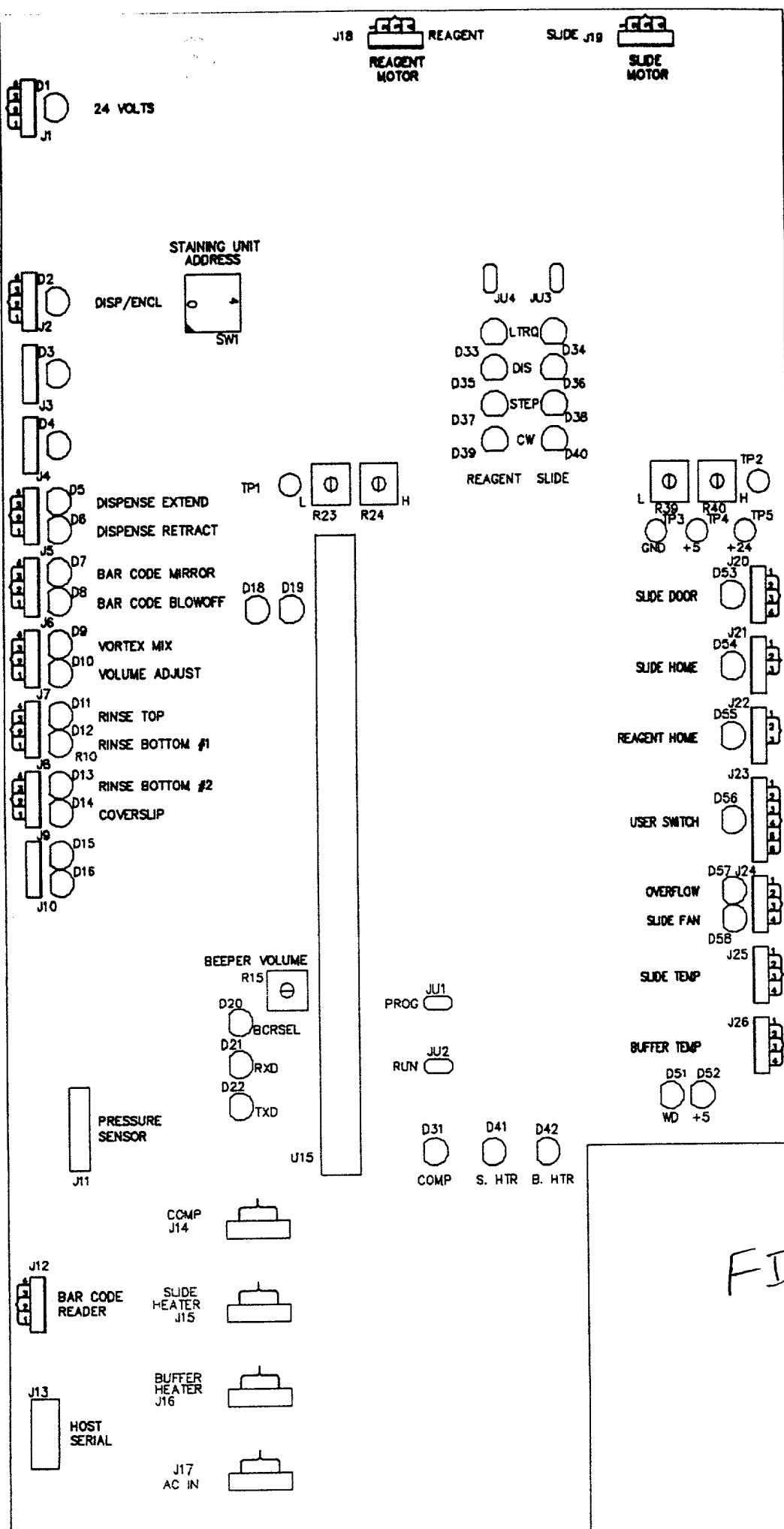


FIG. 6B

DUAL RINSE/VOLUME ADJUST DETAIL

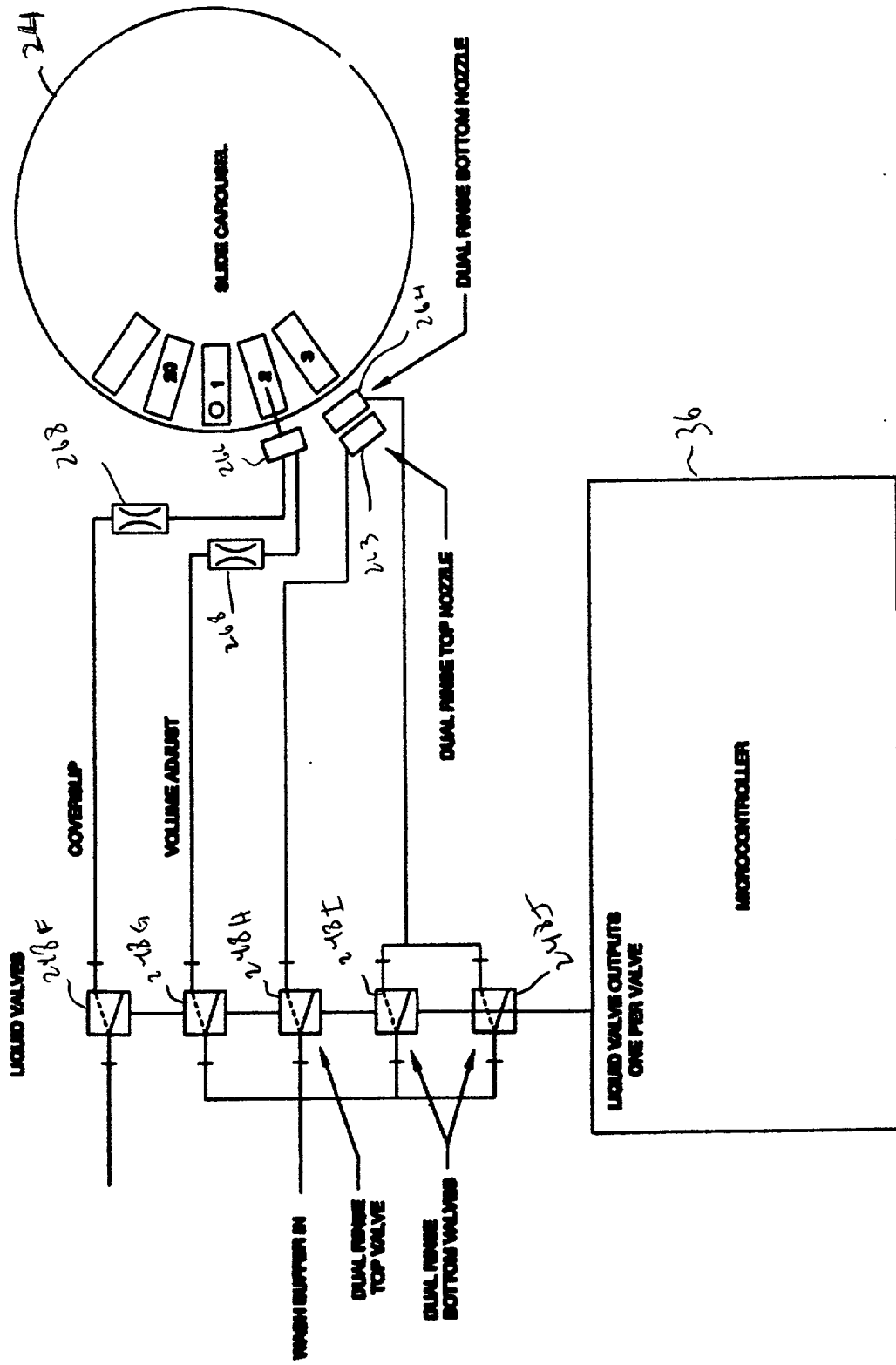


FIG. 7A

FIG. 10

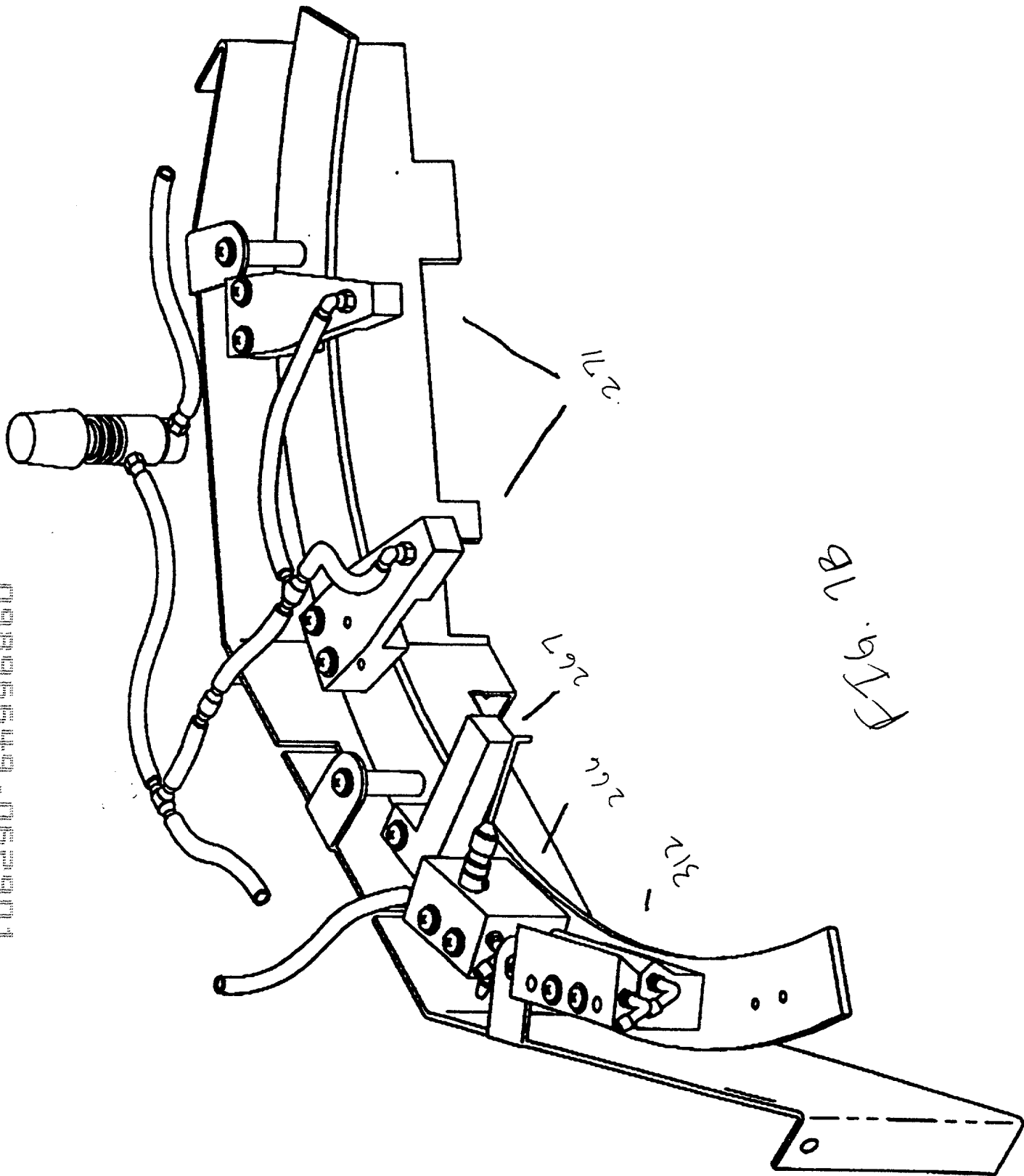


FIG. 11



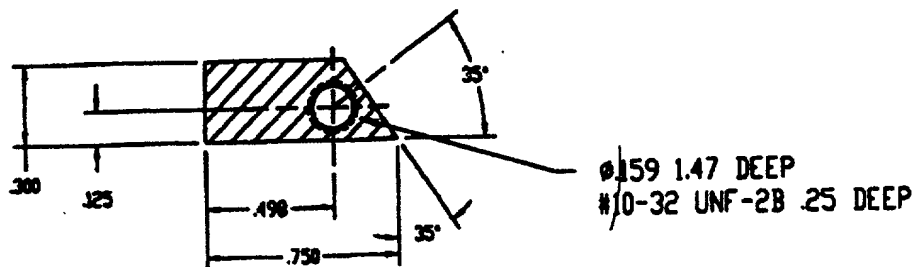


Figure 8B

105290-649630

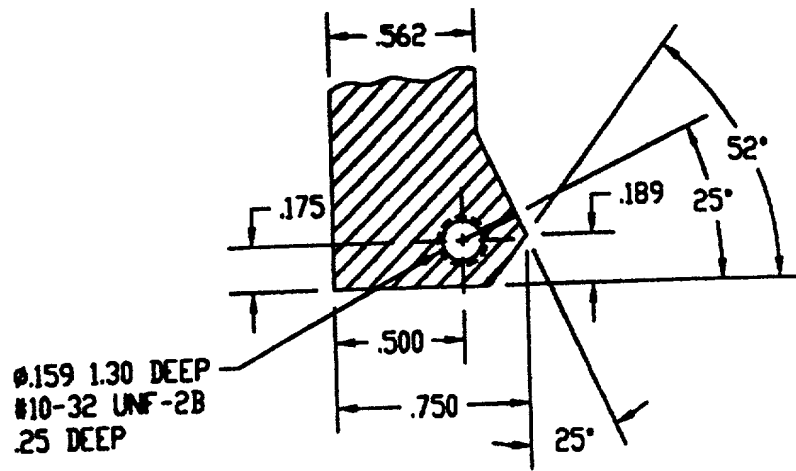


Figure 8c

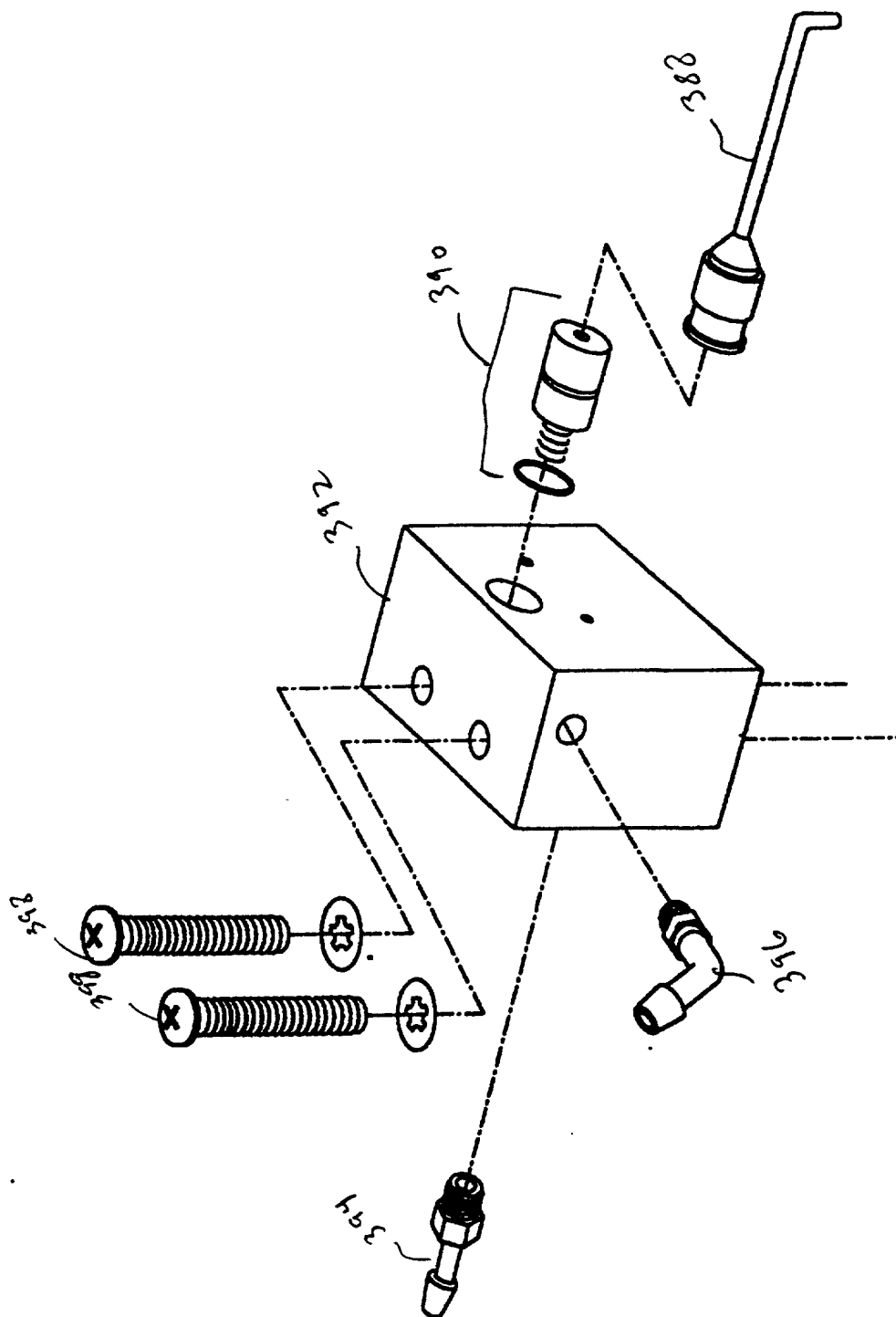
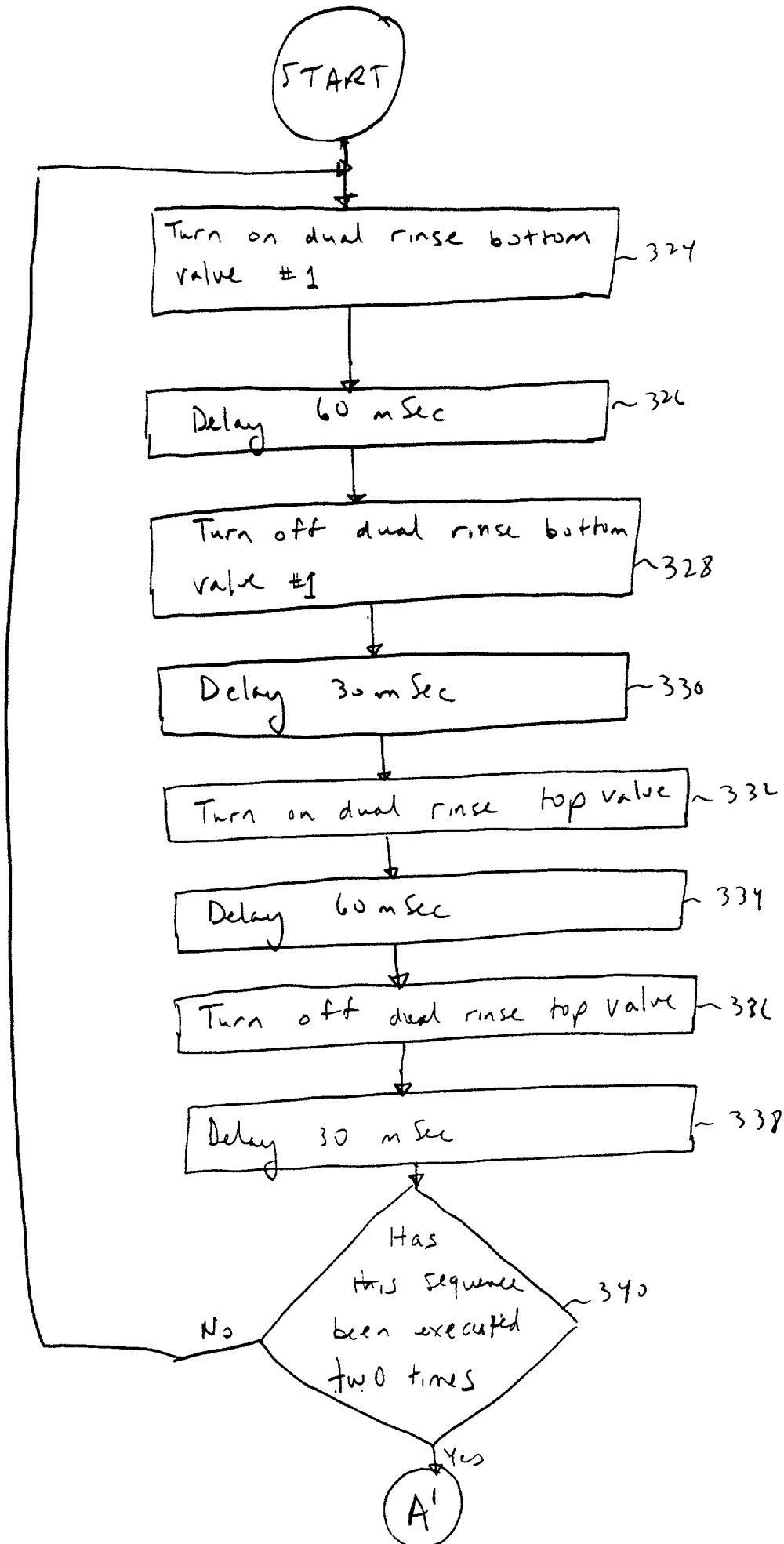
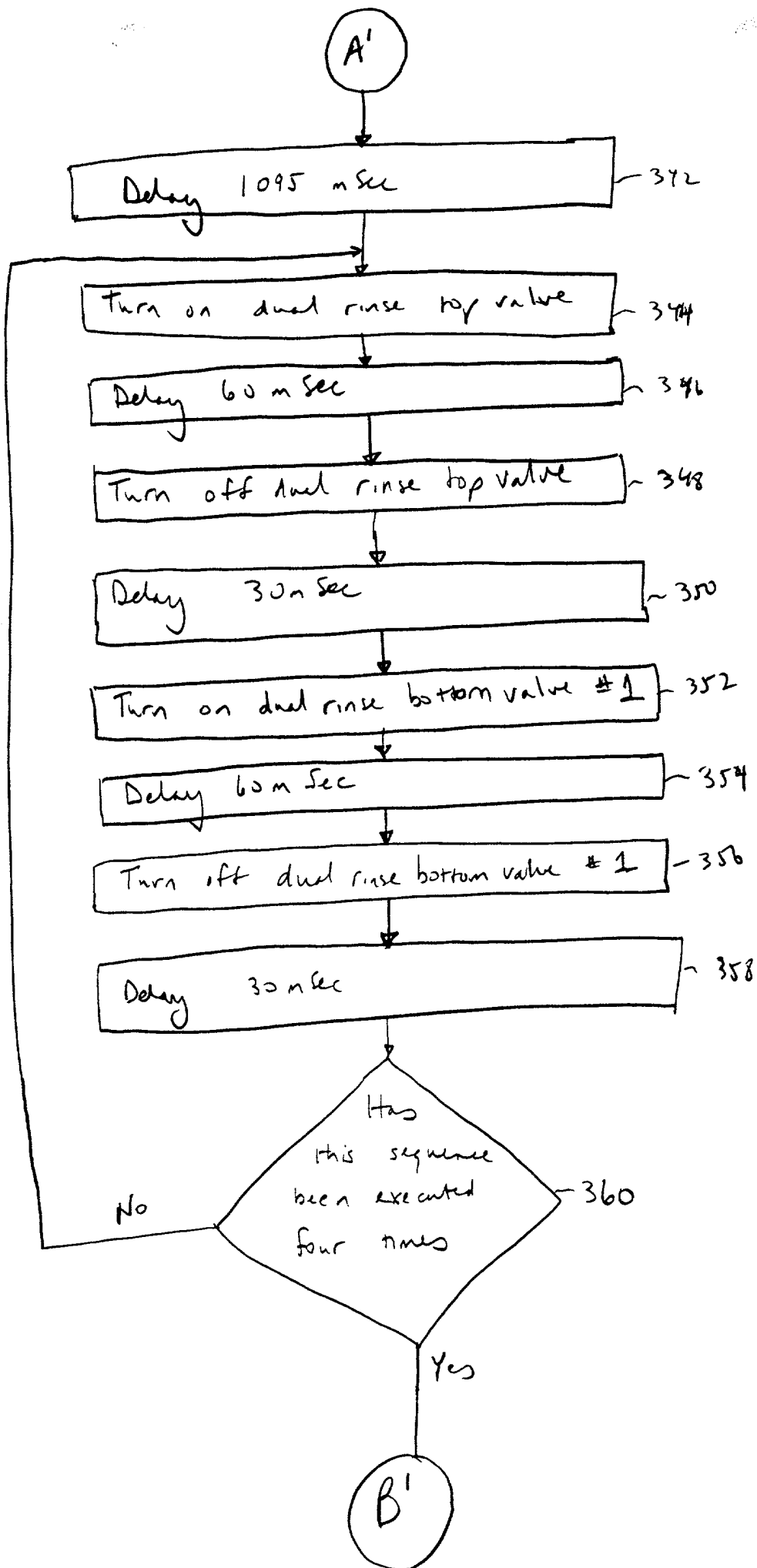


FIG. 8D

FIG. 9.







B'

Turn on dual rinse top valve 362

Delay 60 mSec 364

Turn off dual rinse top valve 366

Delay 1200 mSec 368

Turn on dual rinse bottom valve #1 370

Turn on dual rinse bottom valve #2 372

Delay 300 mSec 374

Turn off dual rinse bottom valve #1 376

Turn off dual rinse bottom valve #2 378

Move slide carousel one position 380

Turn on volume adjust valve 382

Delay depending on amount of liquid to be deposited 384

Turn off volume adjust valve 386

end

6496860

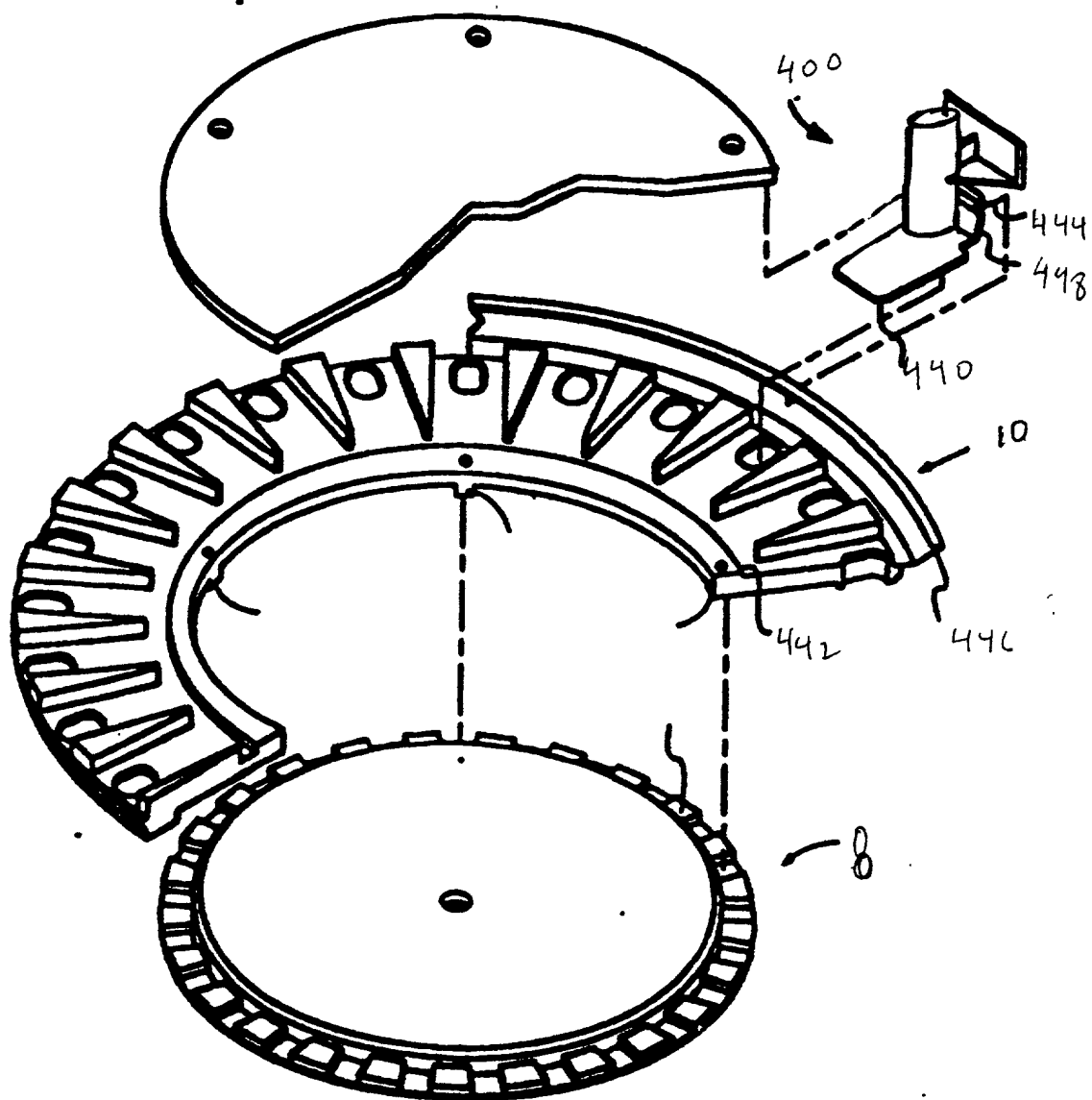


FIG. 10

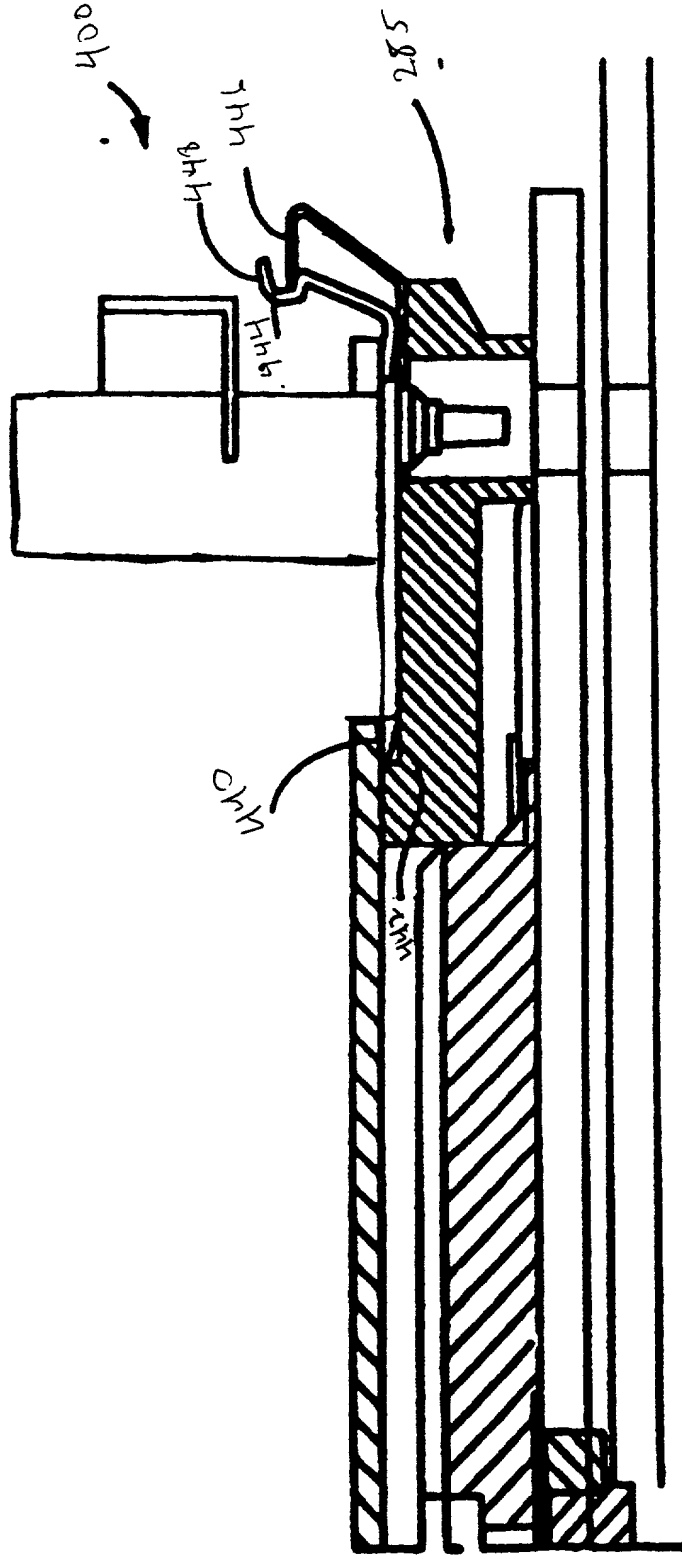
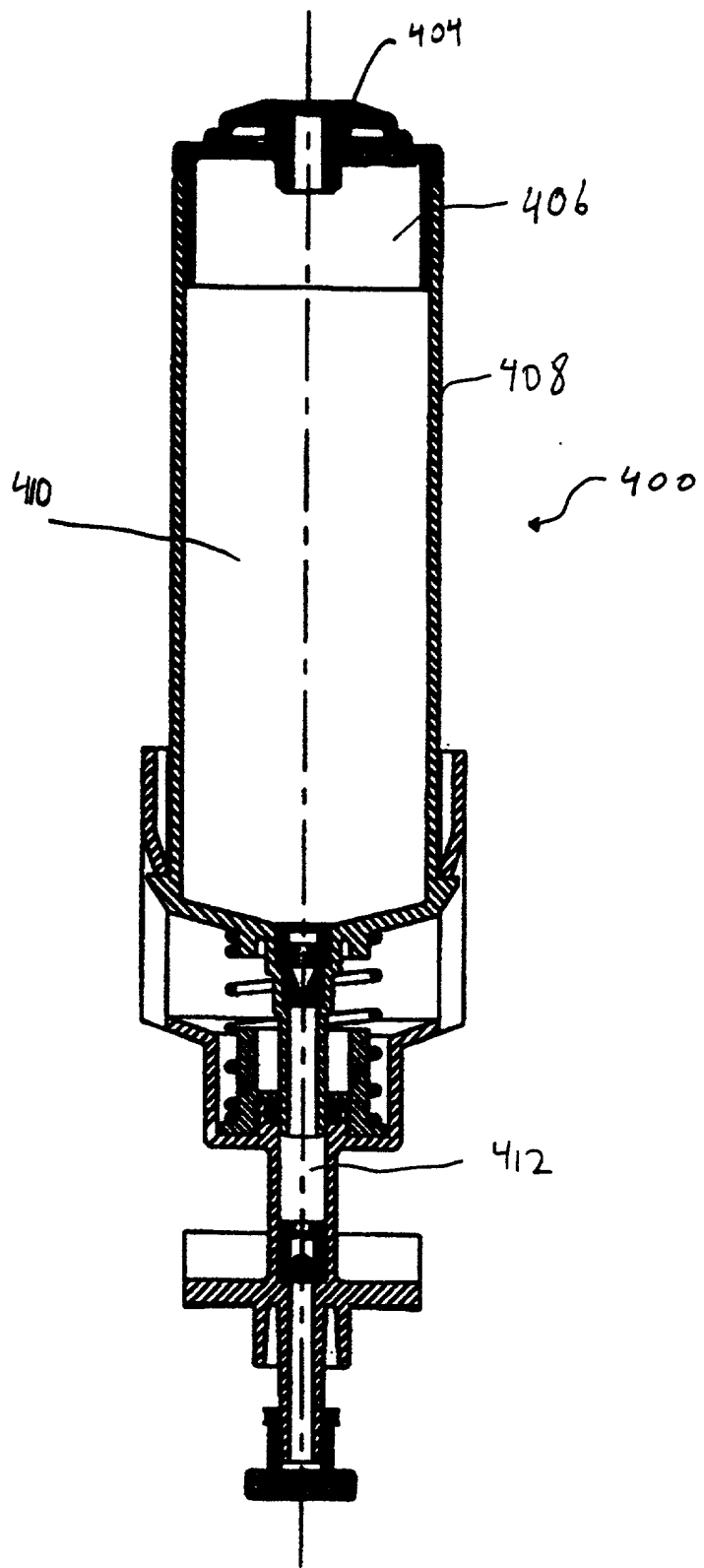


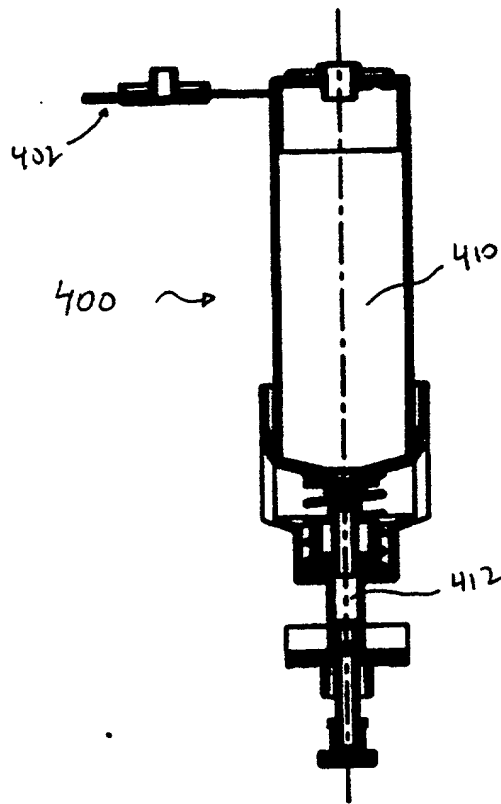
FIG. 11



PREFILLED DISPENSER

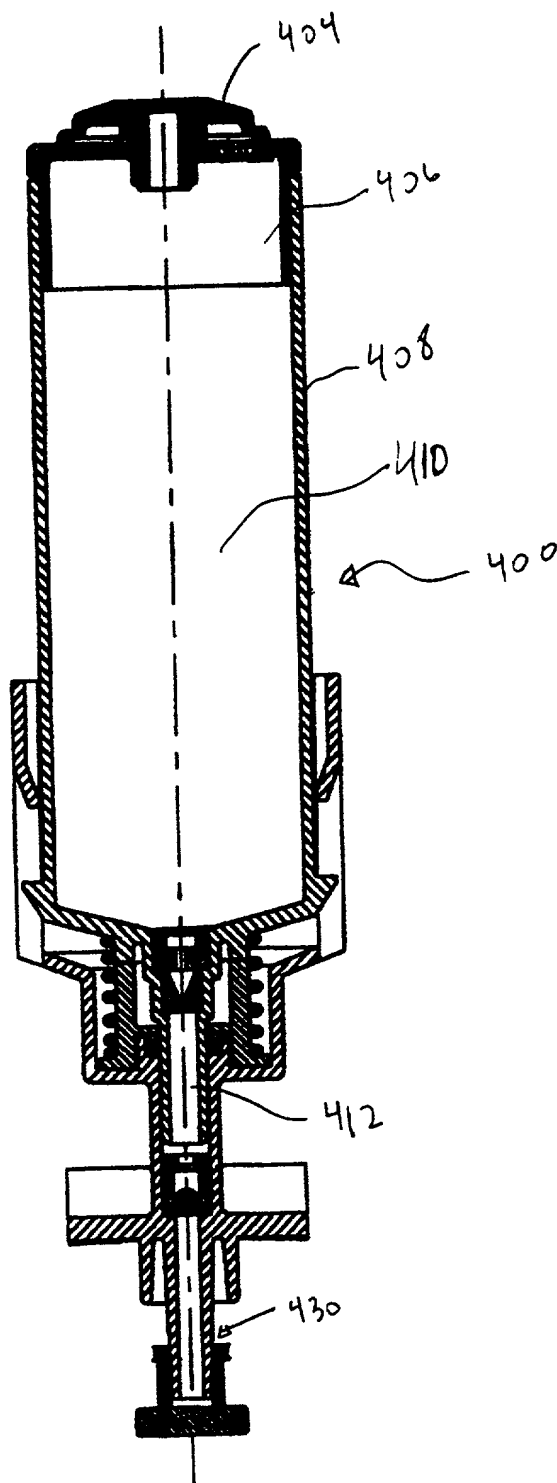
FIG. 12A

106250 649660



CUSTOMER FILLED DISPENSER  
WITH FLIP TOP

FIG. 12B



PREFILLED DISPENSER  
(COMPRESSED)

12C

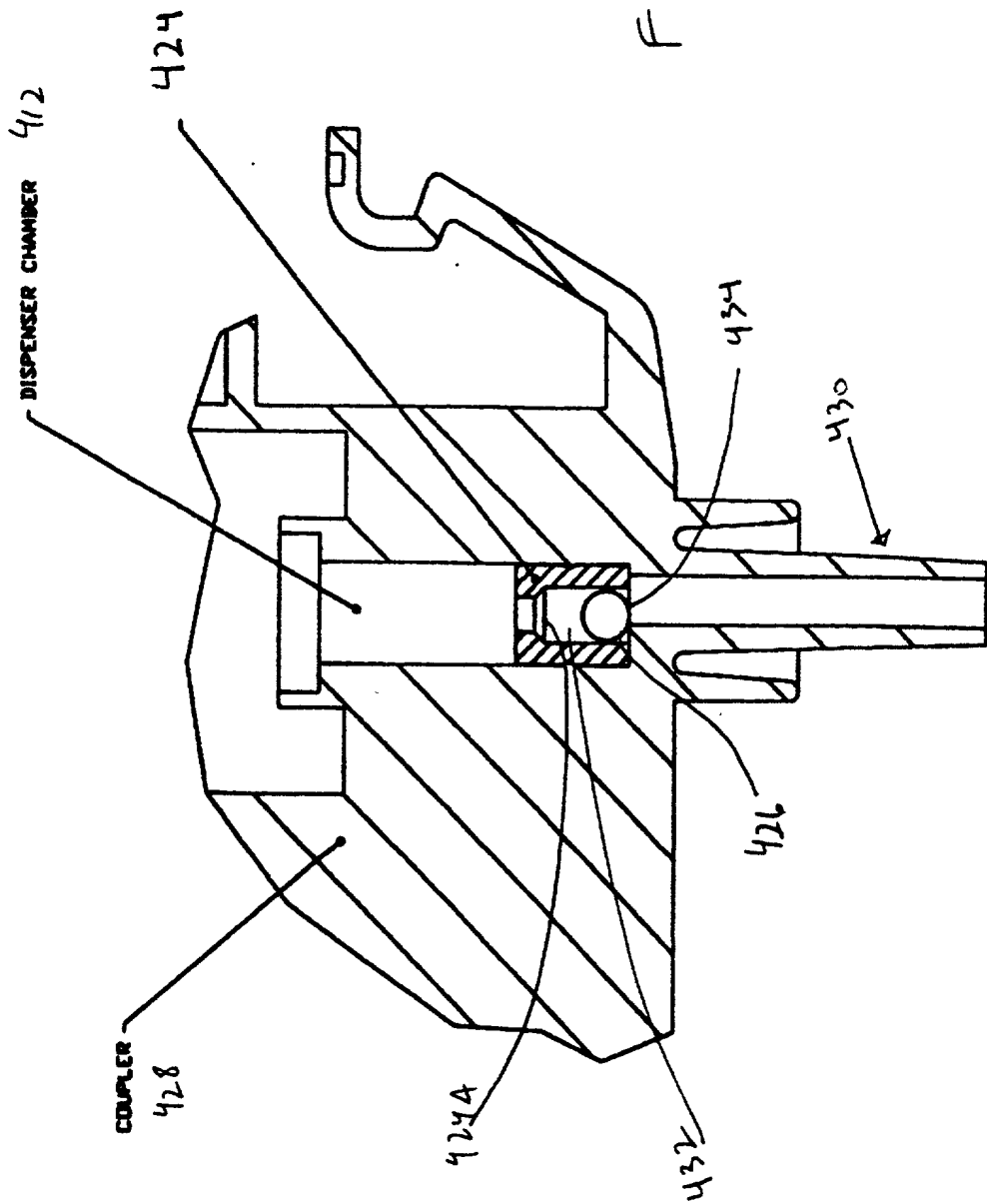


FIG. 13A



Fig. 13B

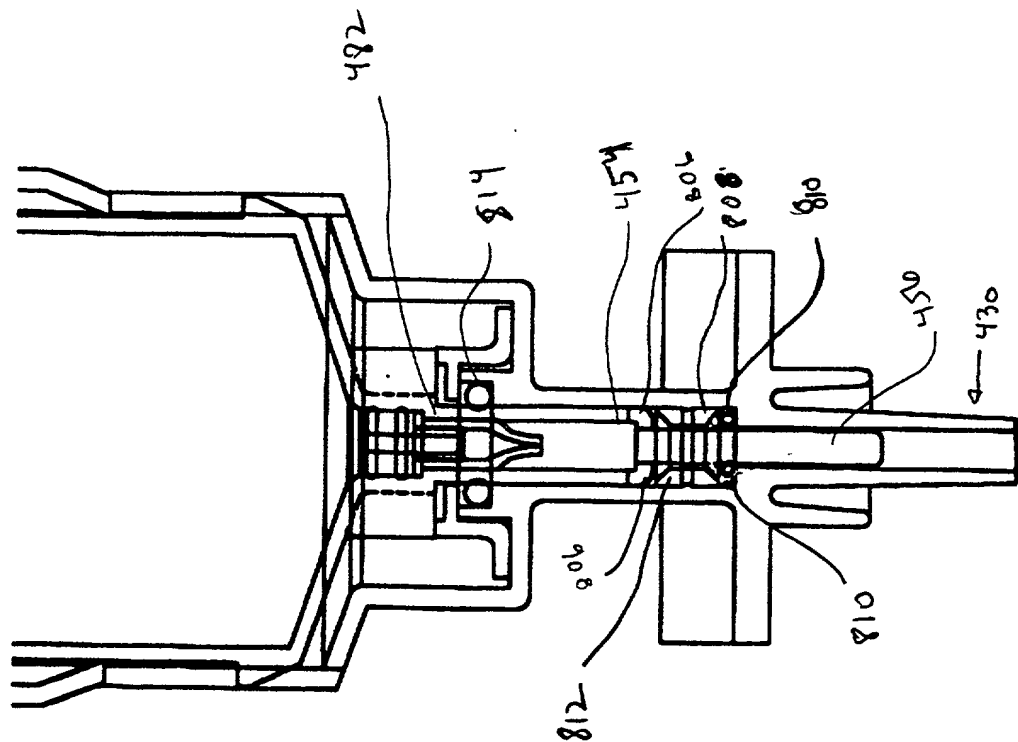


FIG. 13C

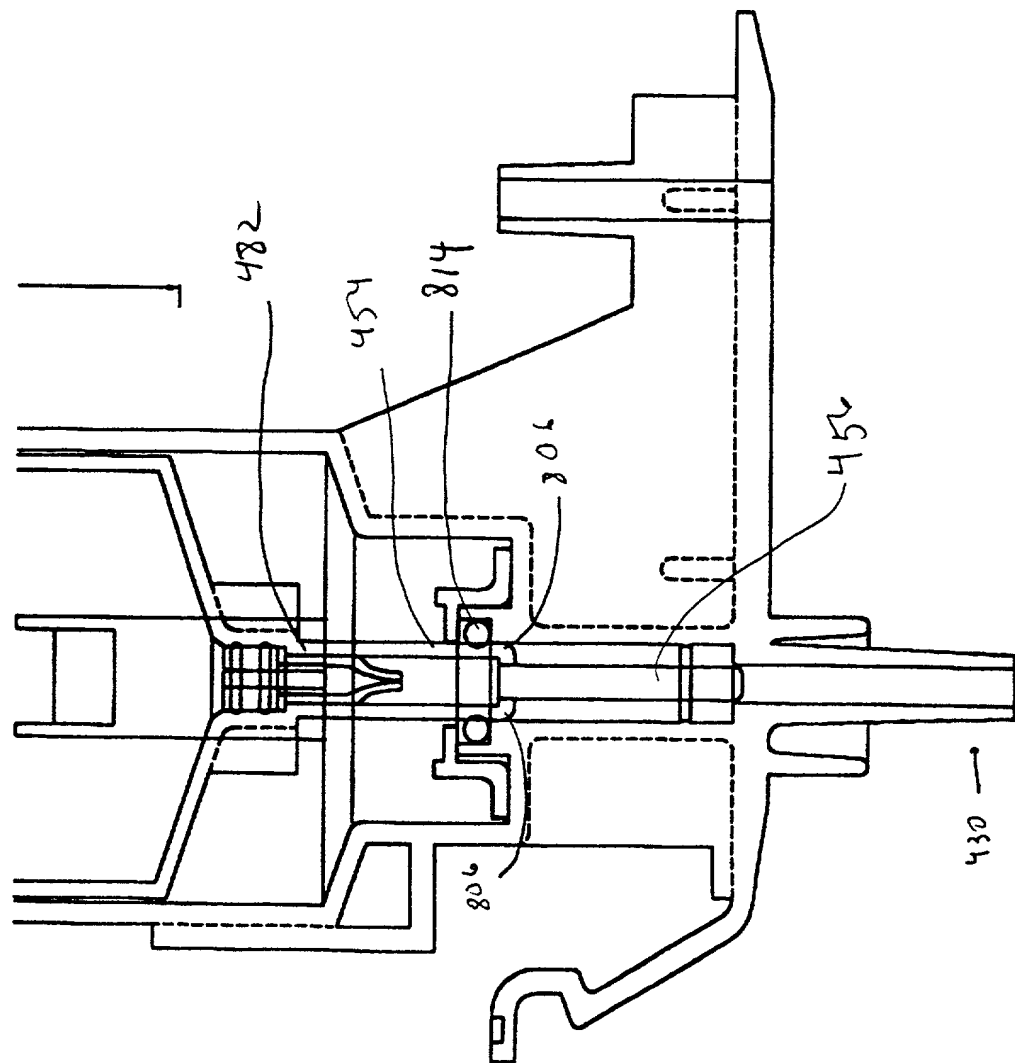
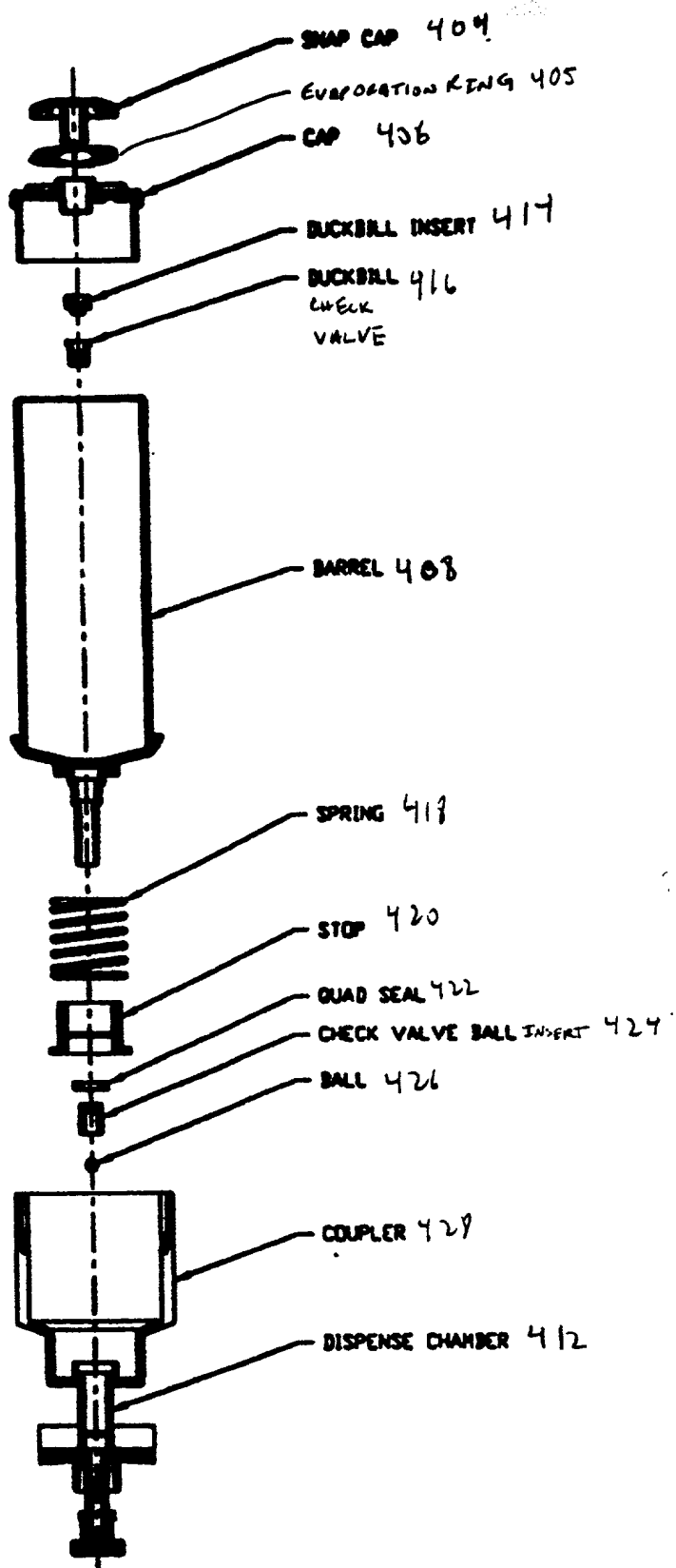
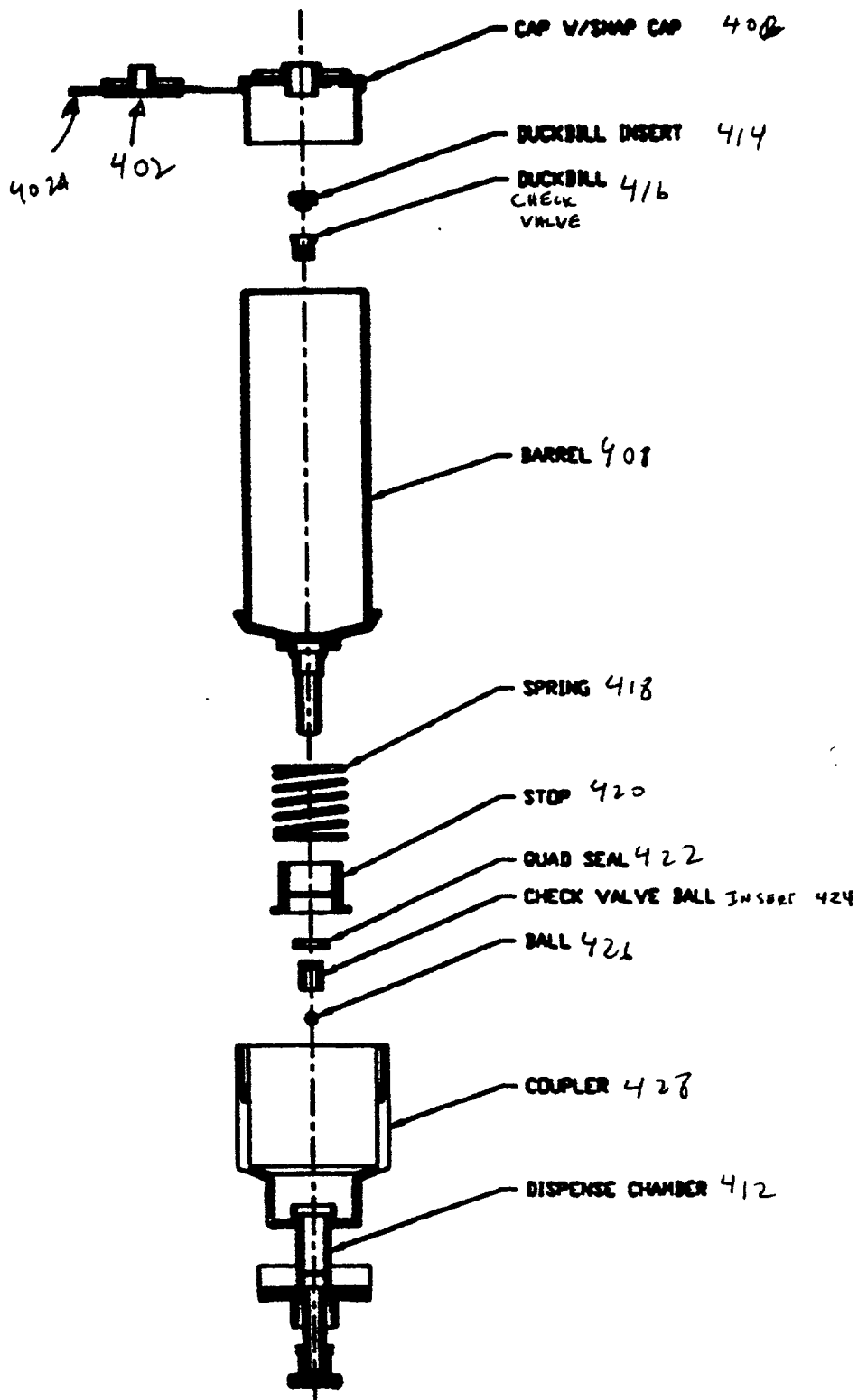


FIG. 14A



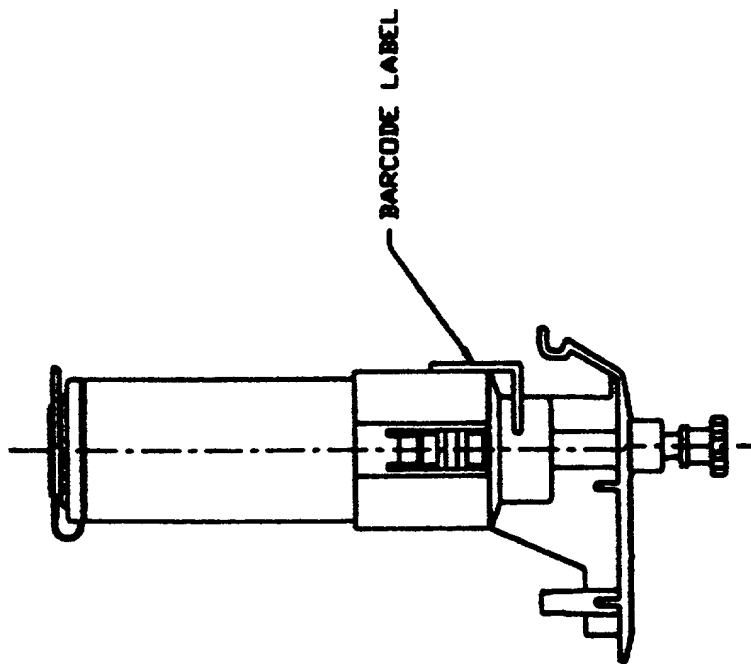
EXPLODED VIEW OF PARTS

FIG. 14A



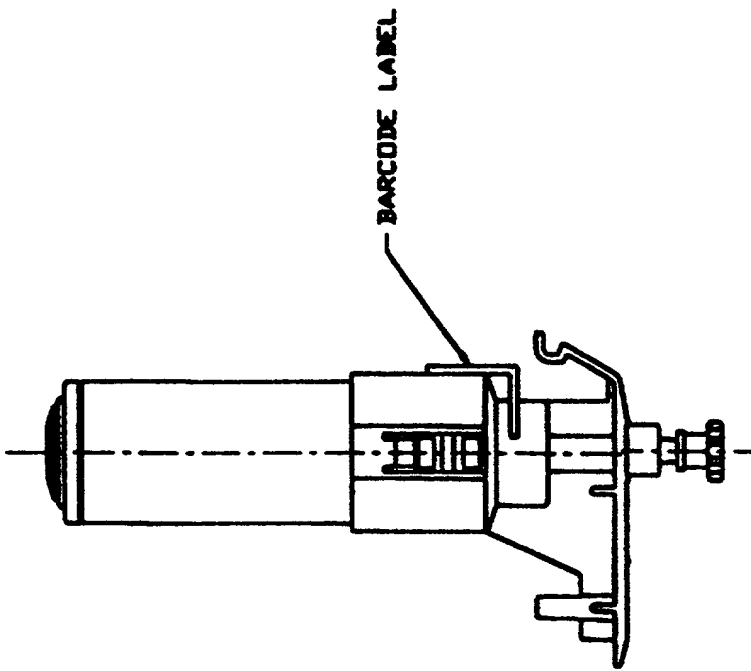
EXPLODED VIEW OF PARTS

FIG. 14B



CUSTOMER FILLED DISPENSER  
WITH FLIP TOP

FIG. 15B



FILLED DISPENSER

FIG. 15A

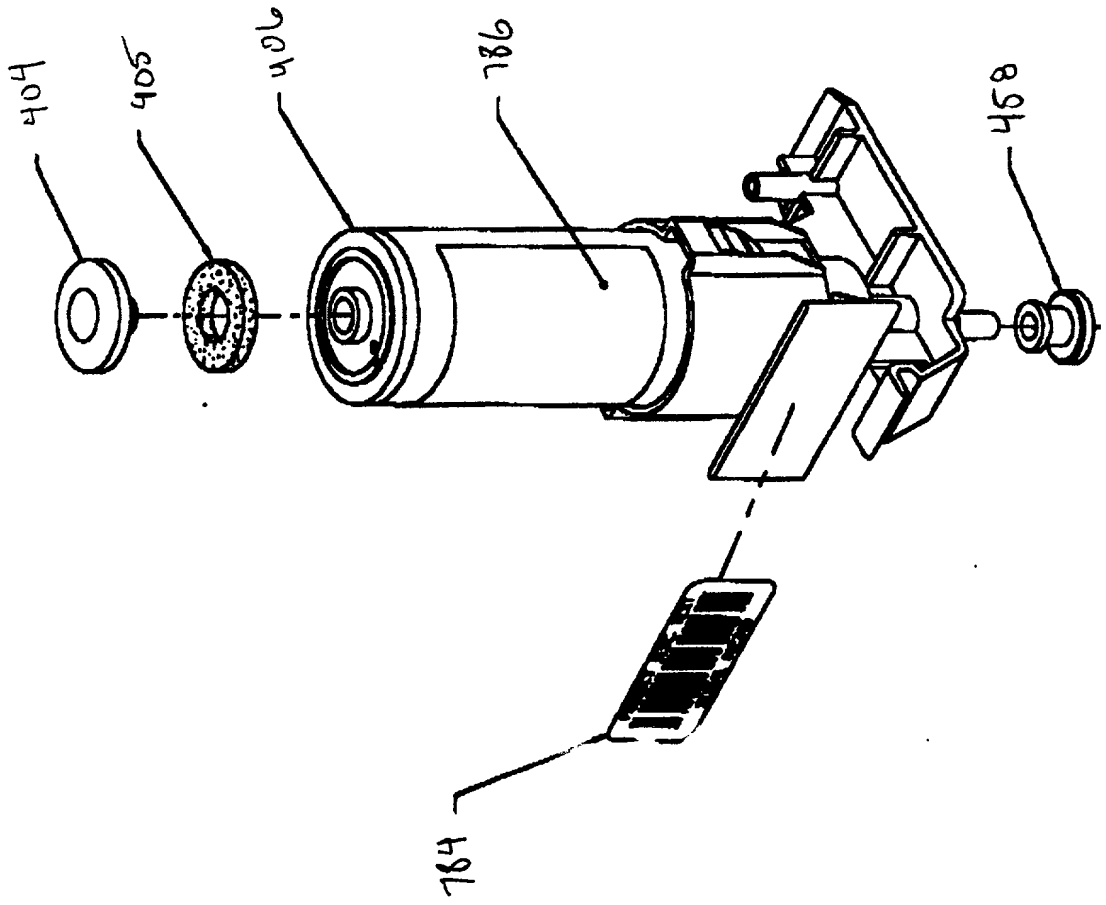


FIG. 15C

FIG 16A

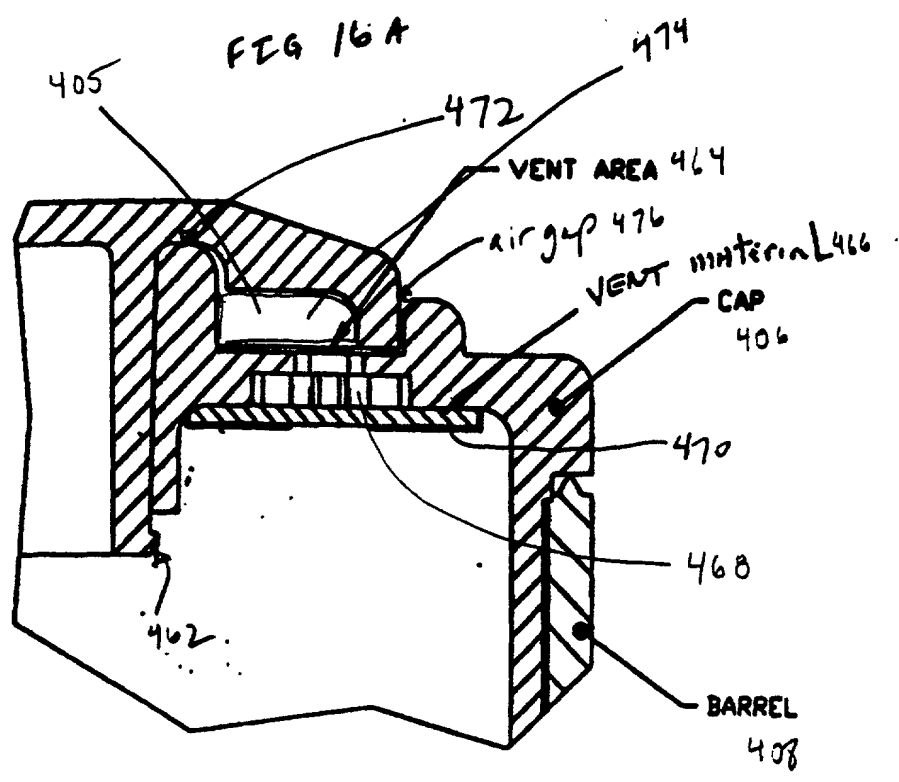
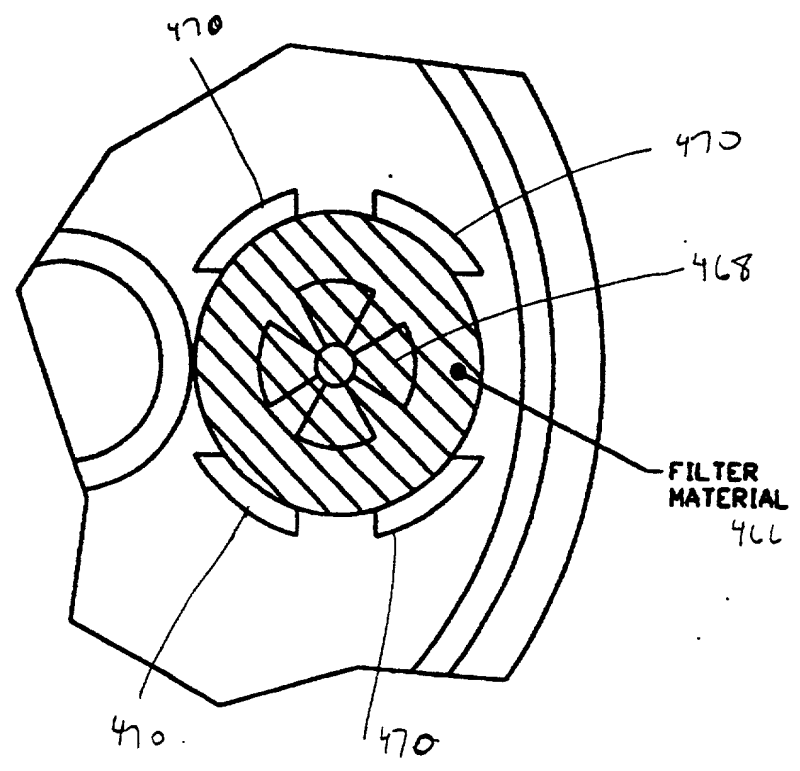


FIG 16B



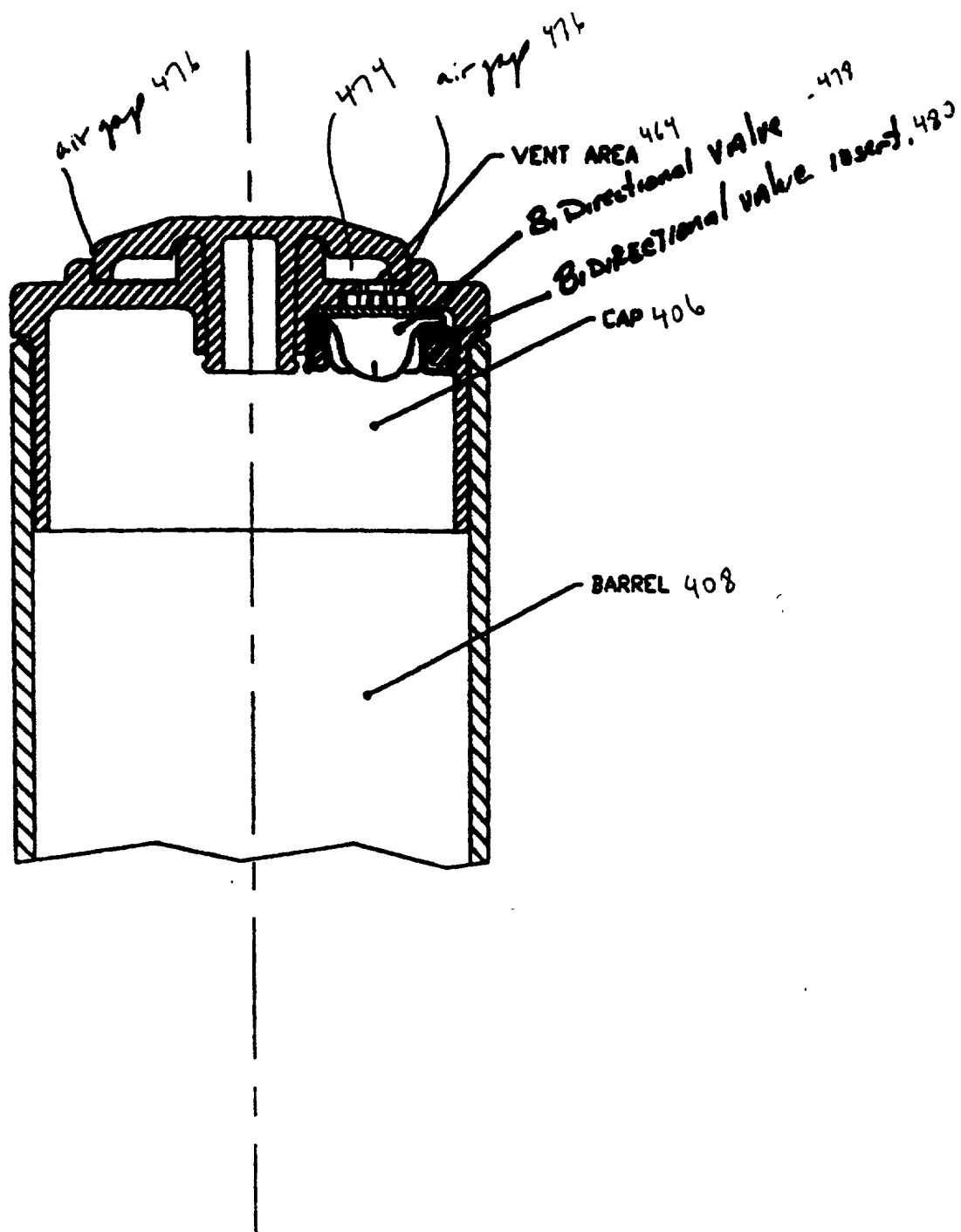


FIG. 16C

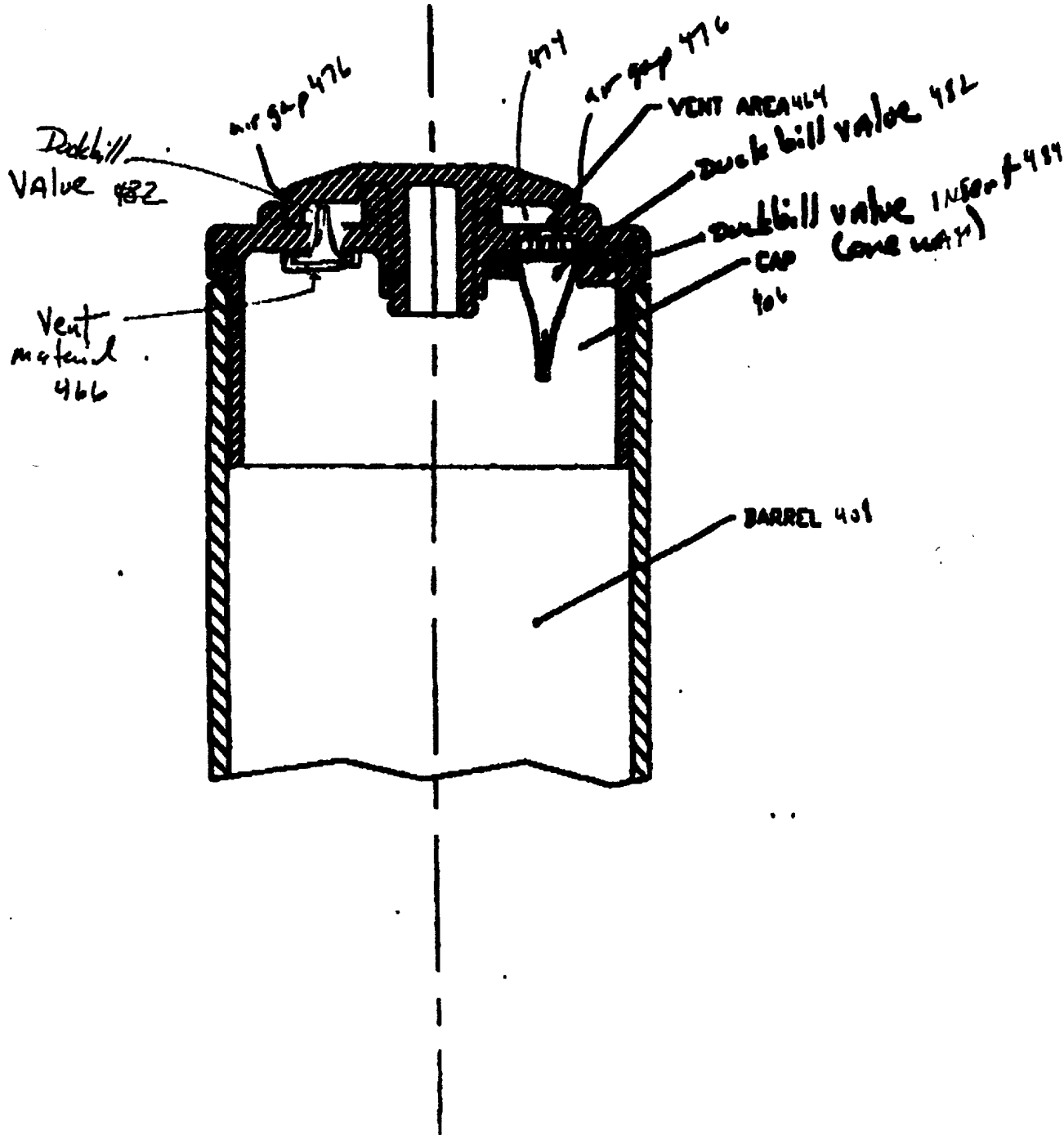


FIG. 100



TOP SECRET 6496850

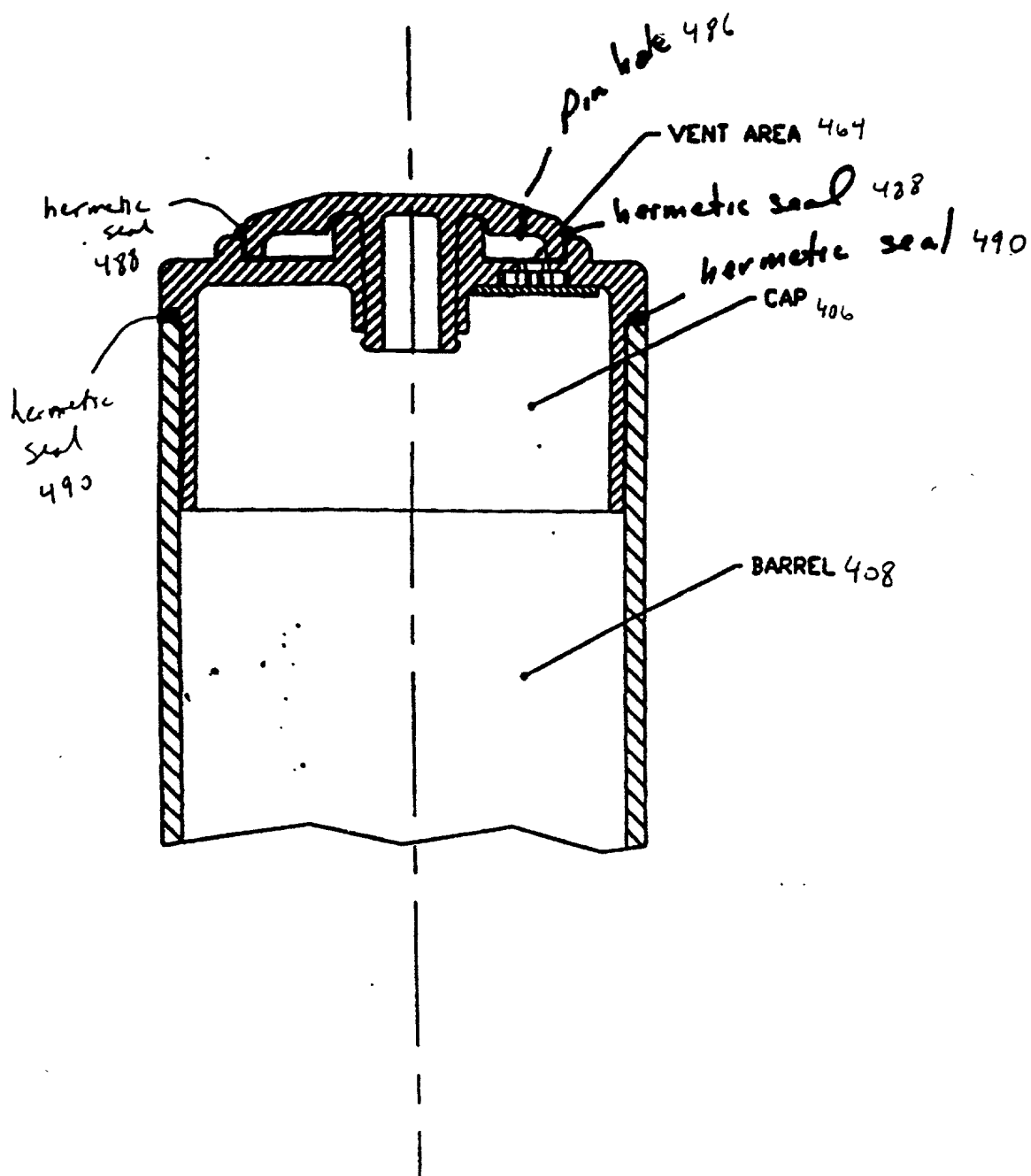


FIG. 16E

FIG. 17A

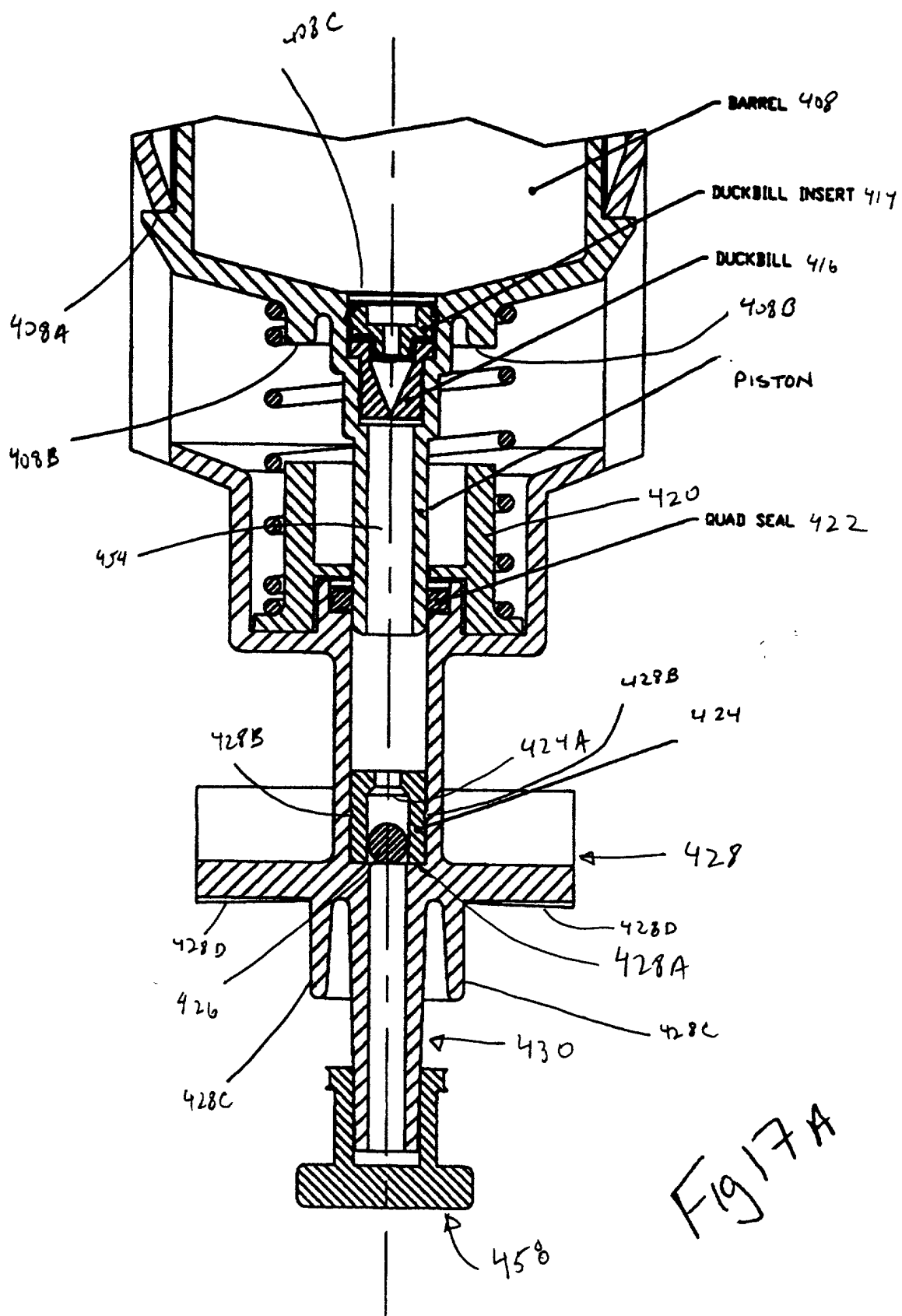
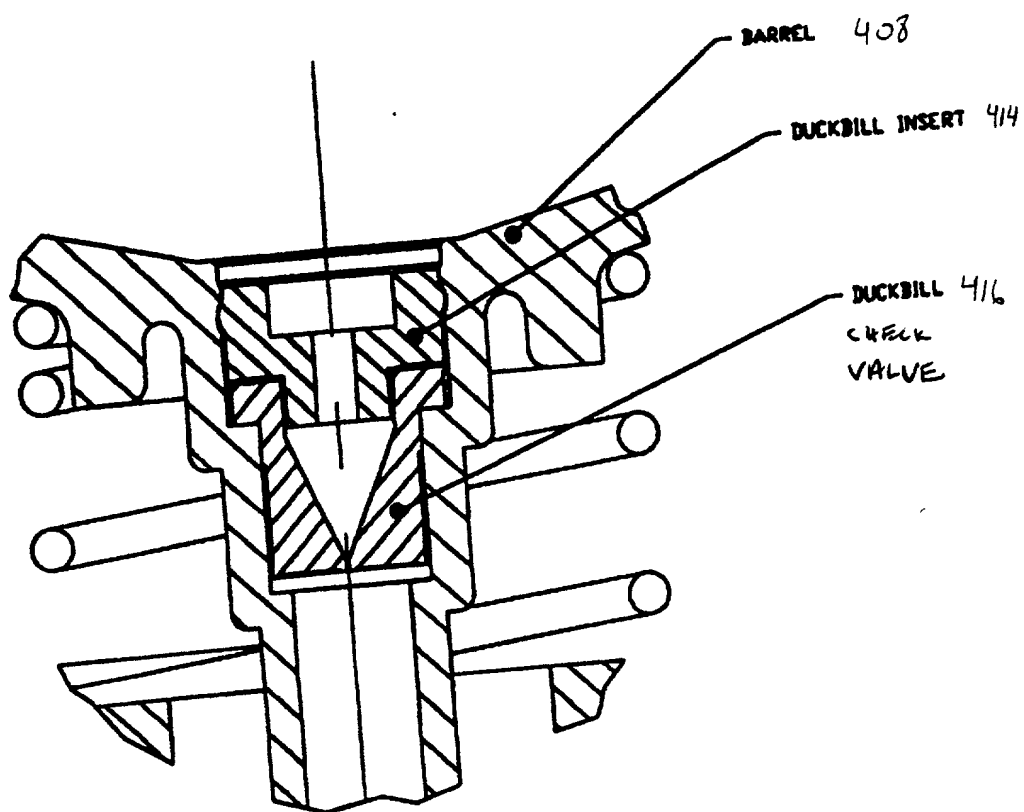


Fig 17A

FIG. 17B



17 B

FIG. 17C

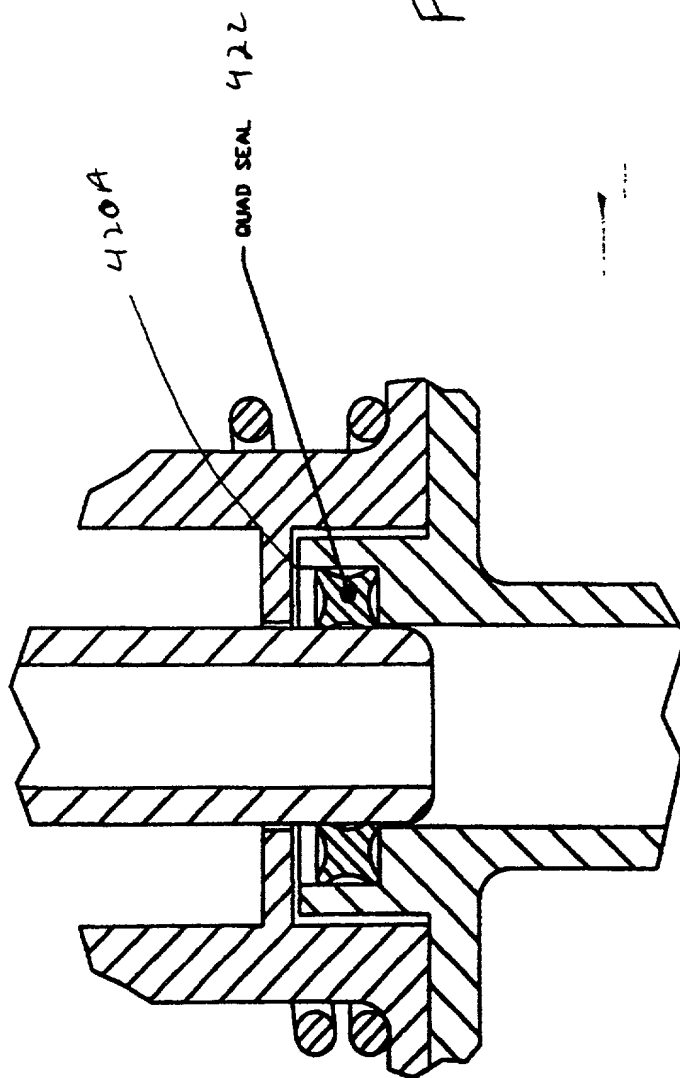


FIG. 17C

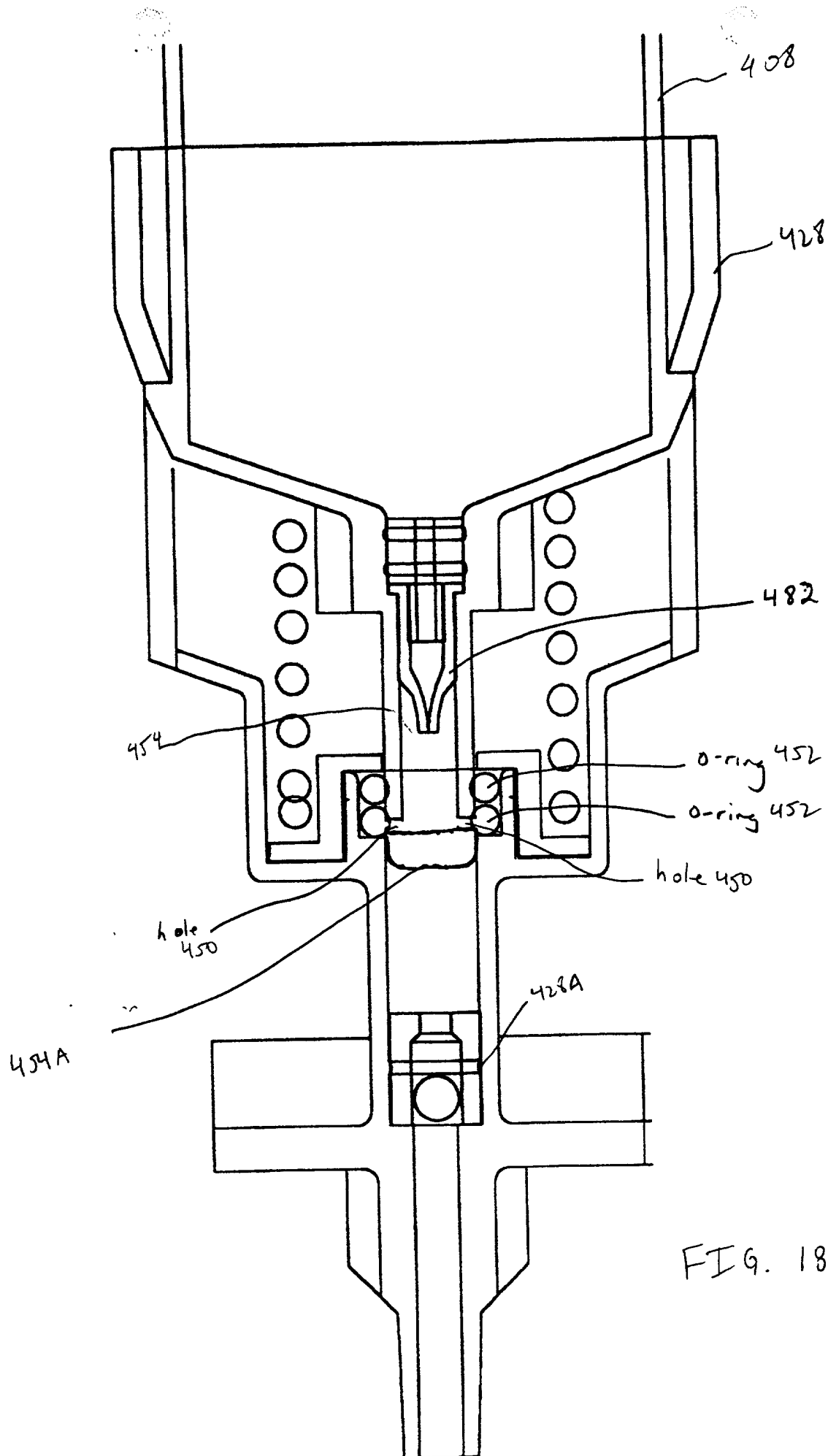


FIG. 18A

FIG 18B

FIG 18B

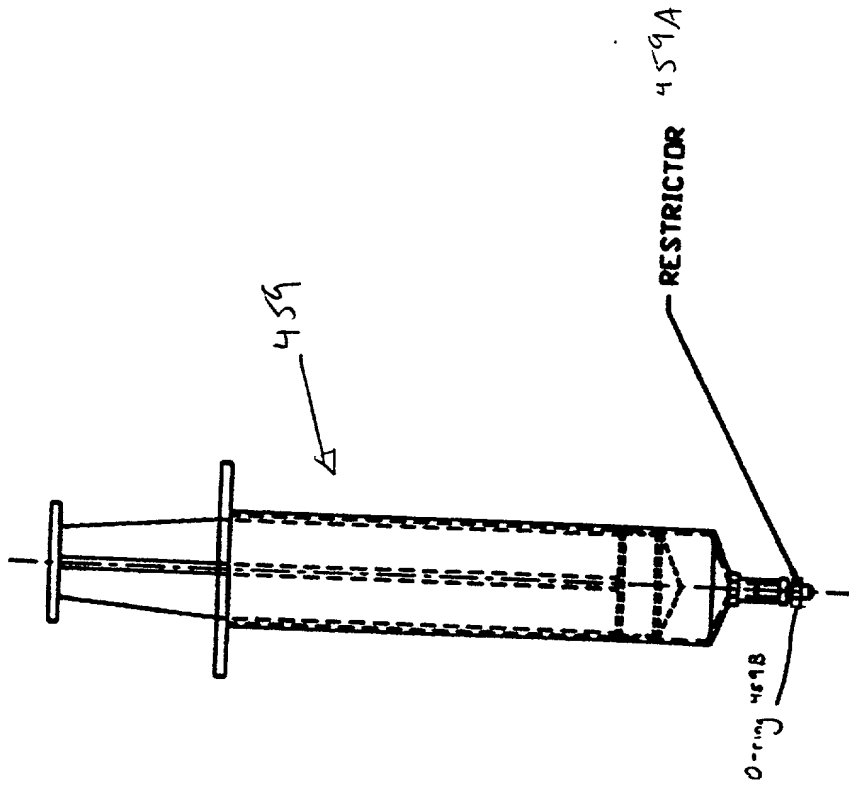


FIG. 19A

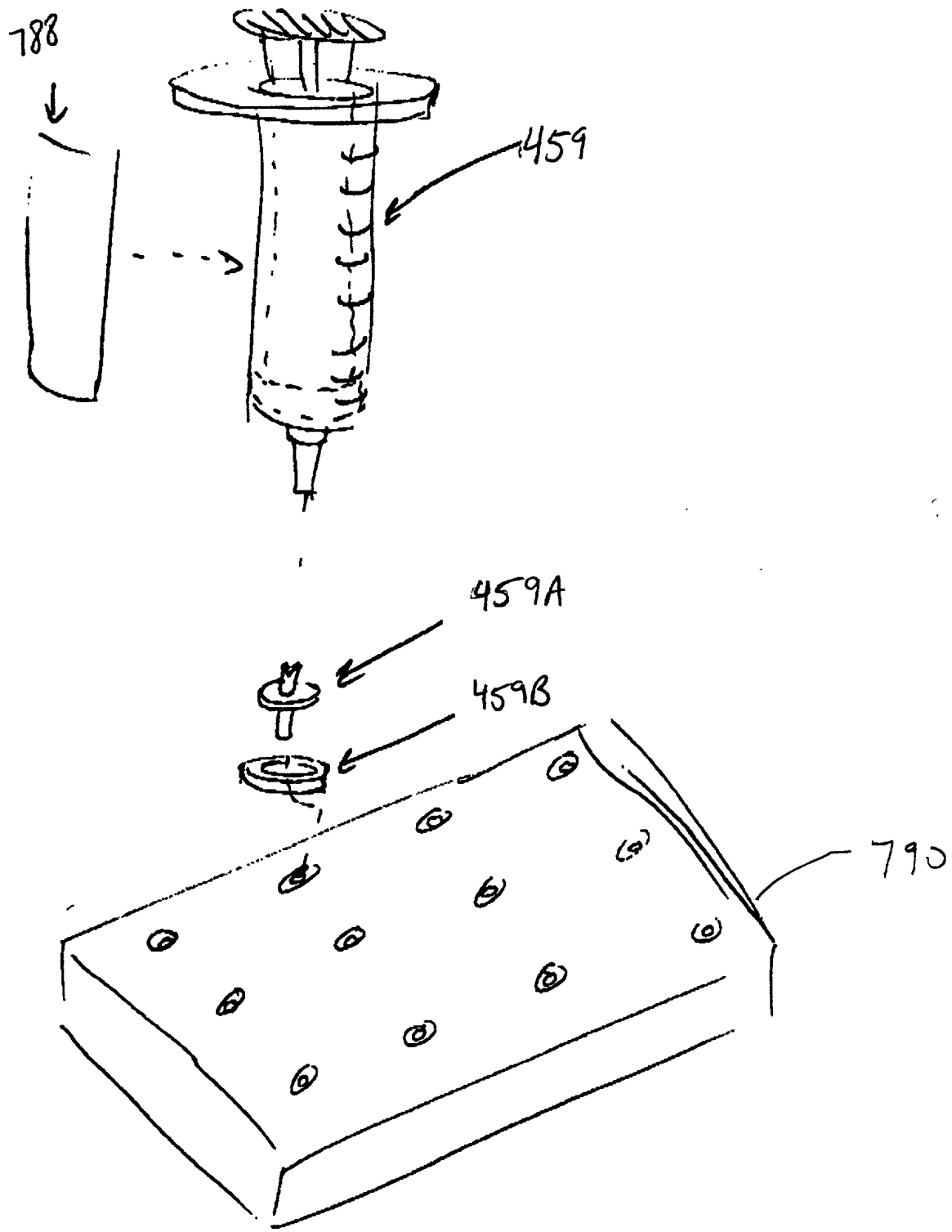


FIG 19B



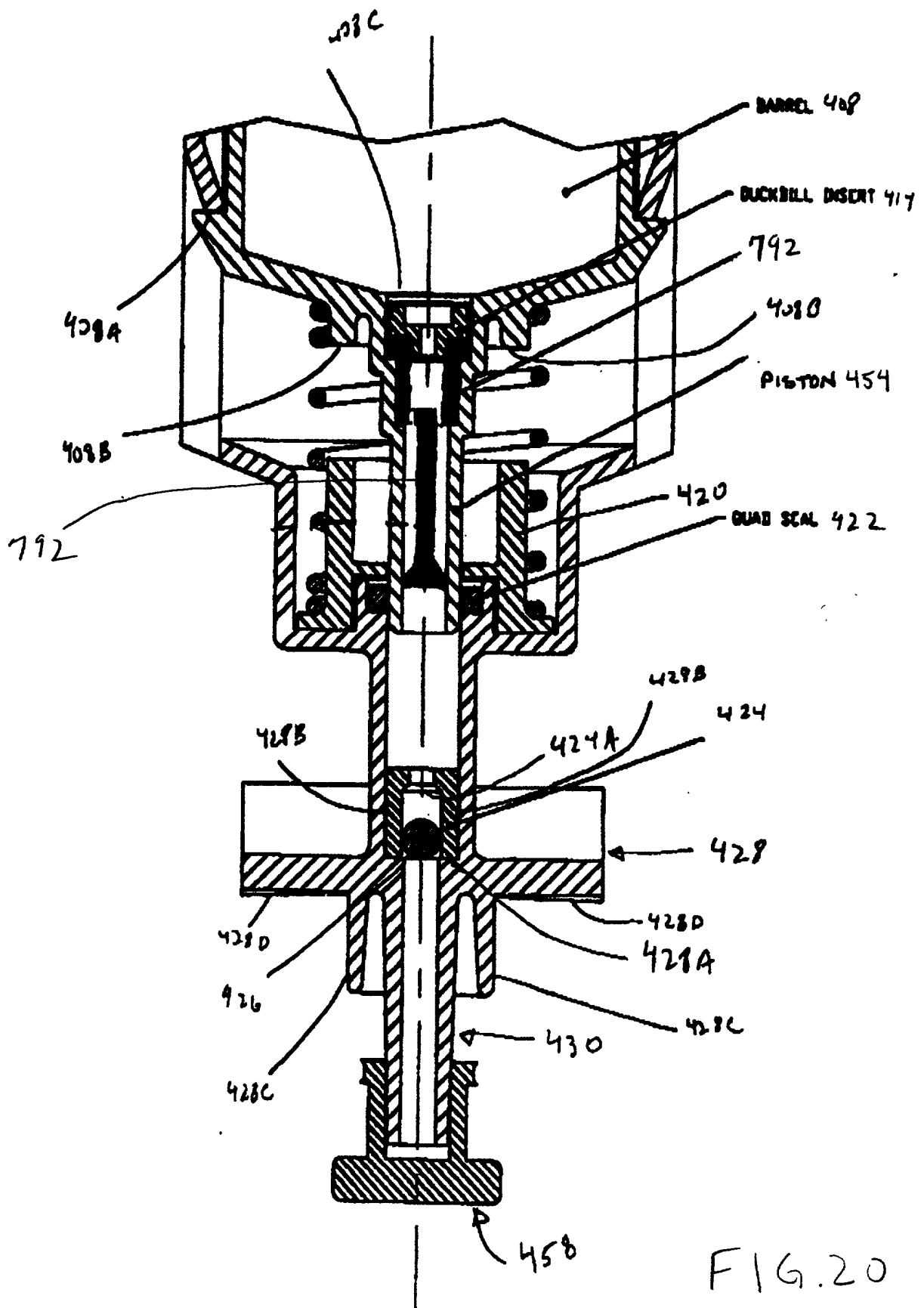
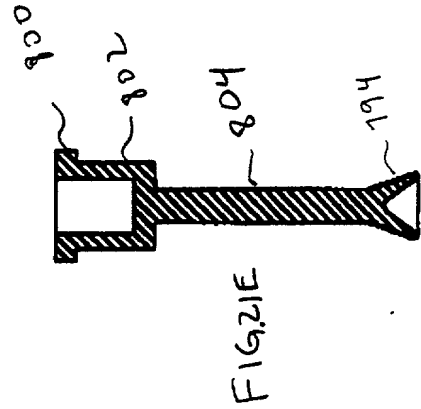
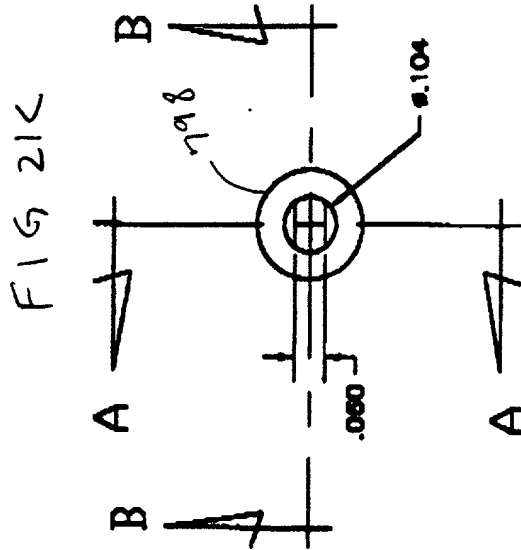
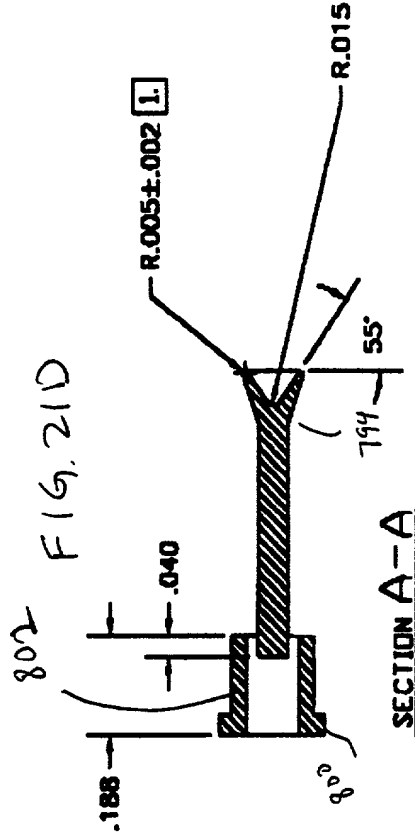


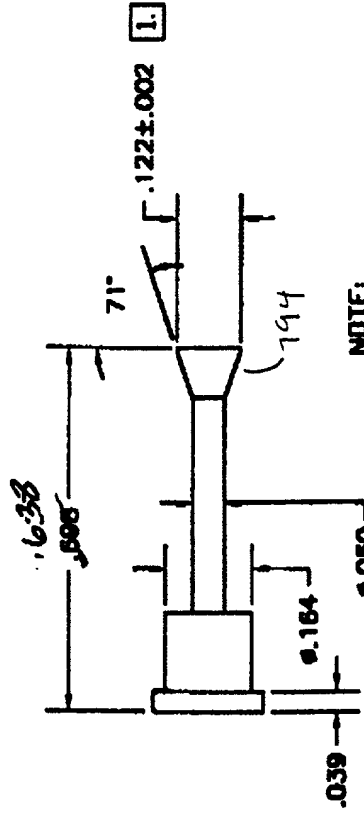
FIG. 20



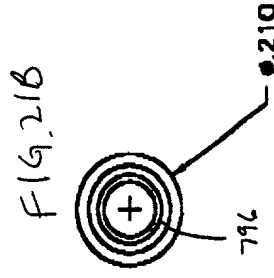
SECTION B-B



SECTION A-A



NOTE:  
[1] NO MOLD LINES OR PARTING LINES ALLOWED ON THE R.010 AT THE Ø.122. THIS SEAL SURFACE TO HAVE 16 MICRO IN SURFACE FINISH.



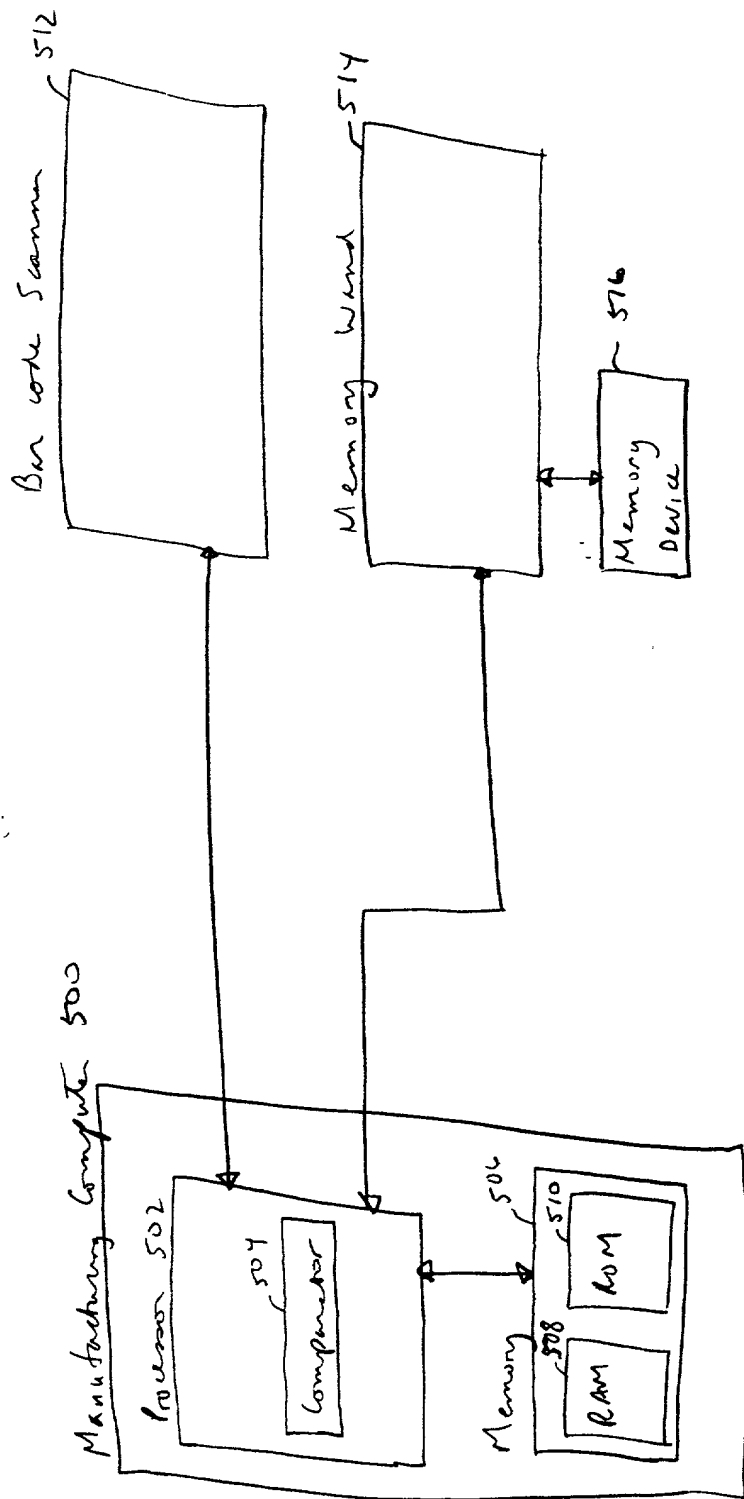
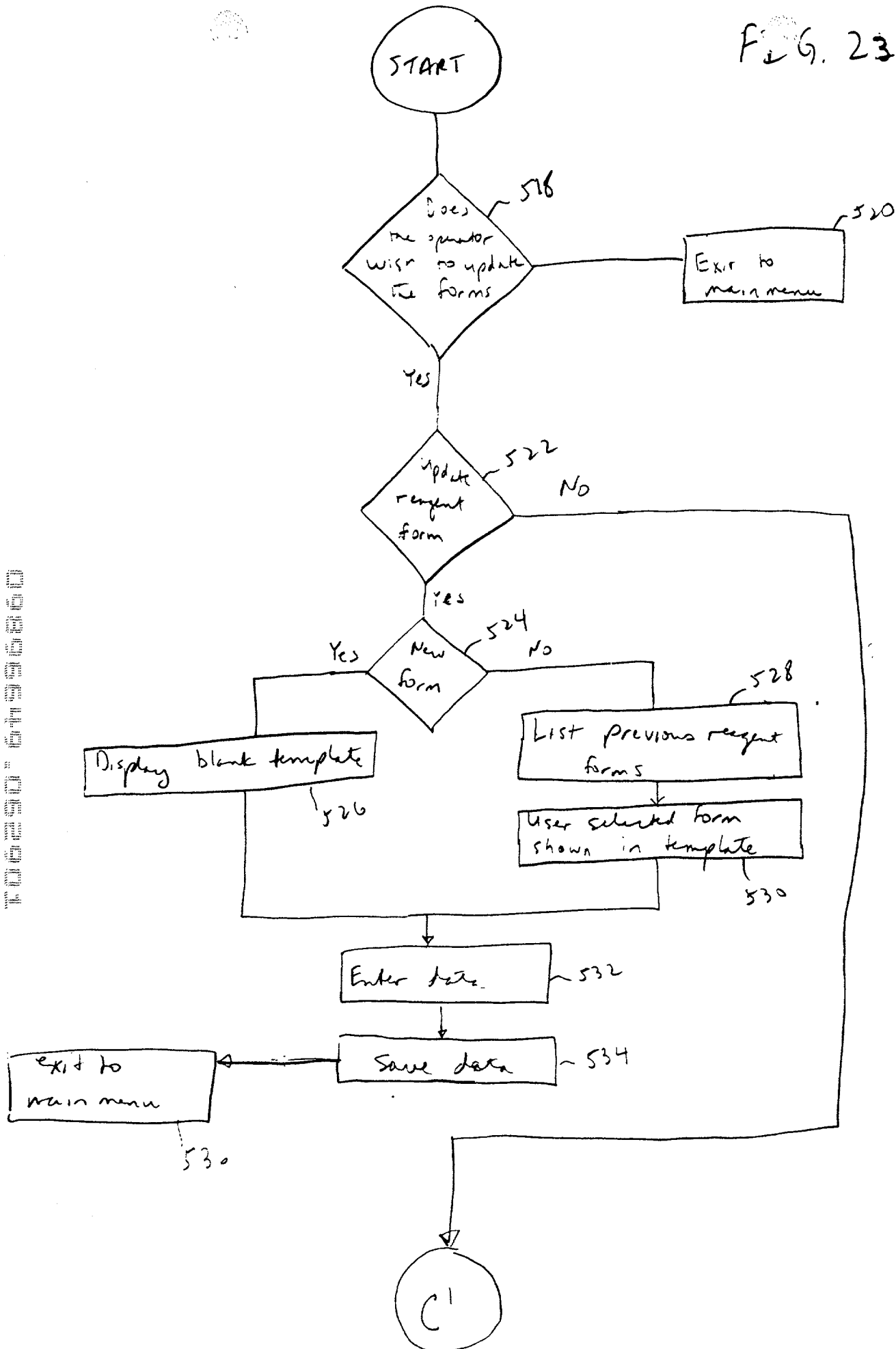


FIG. 22

FIG. 23



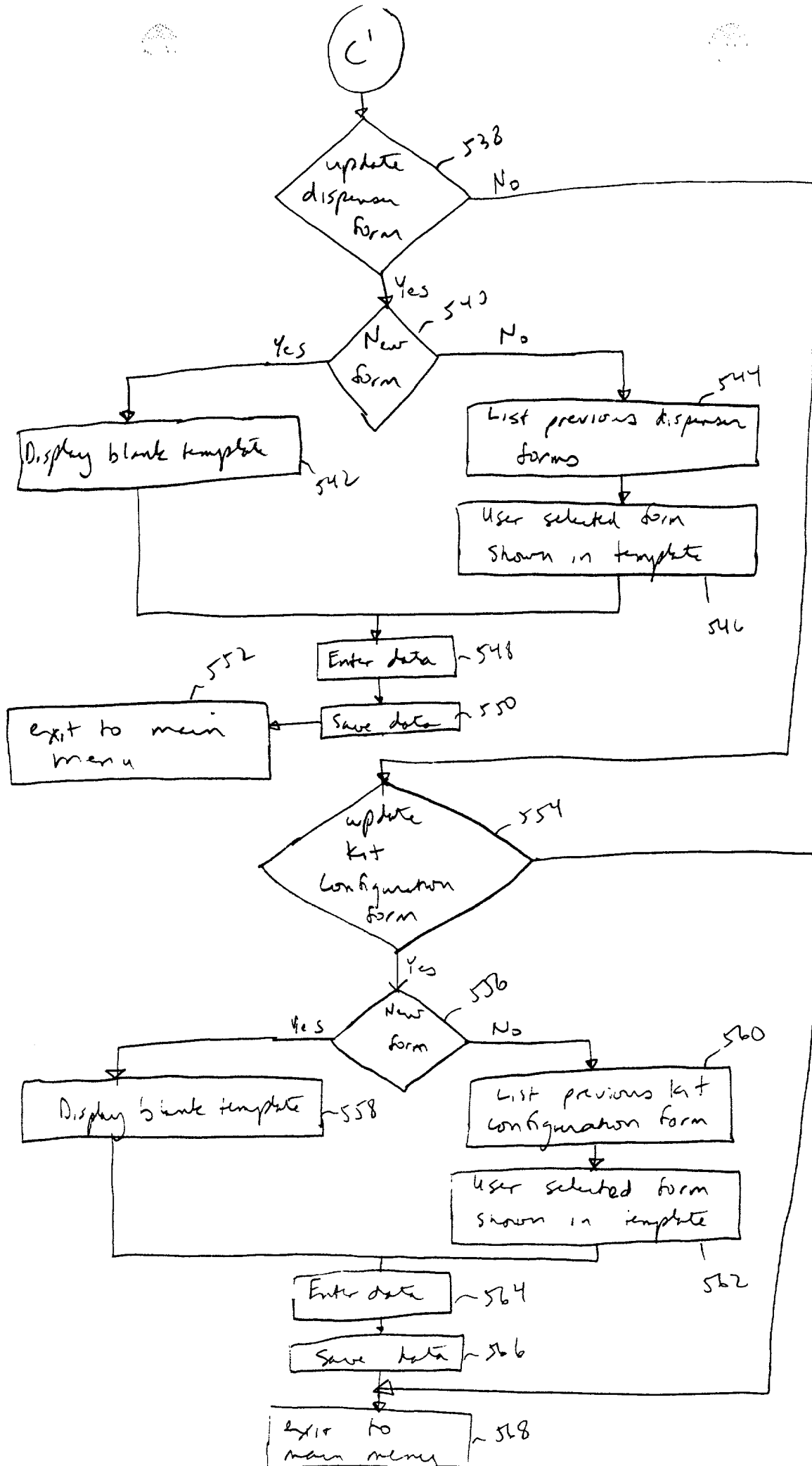
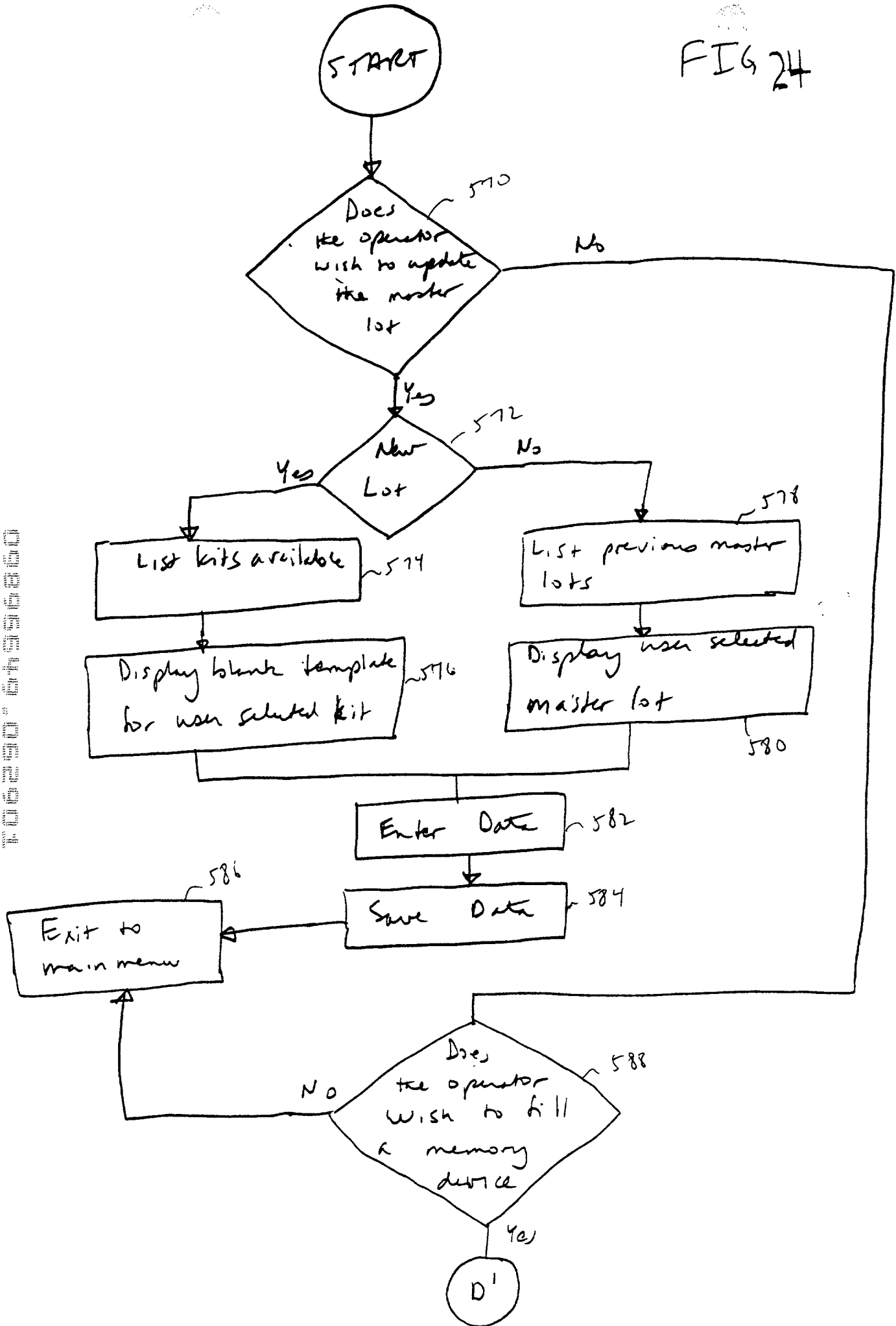
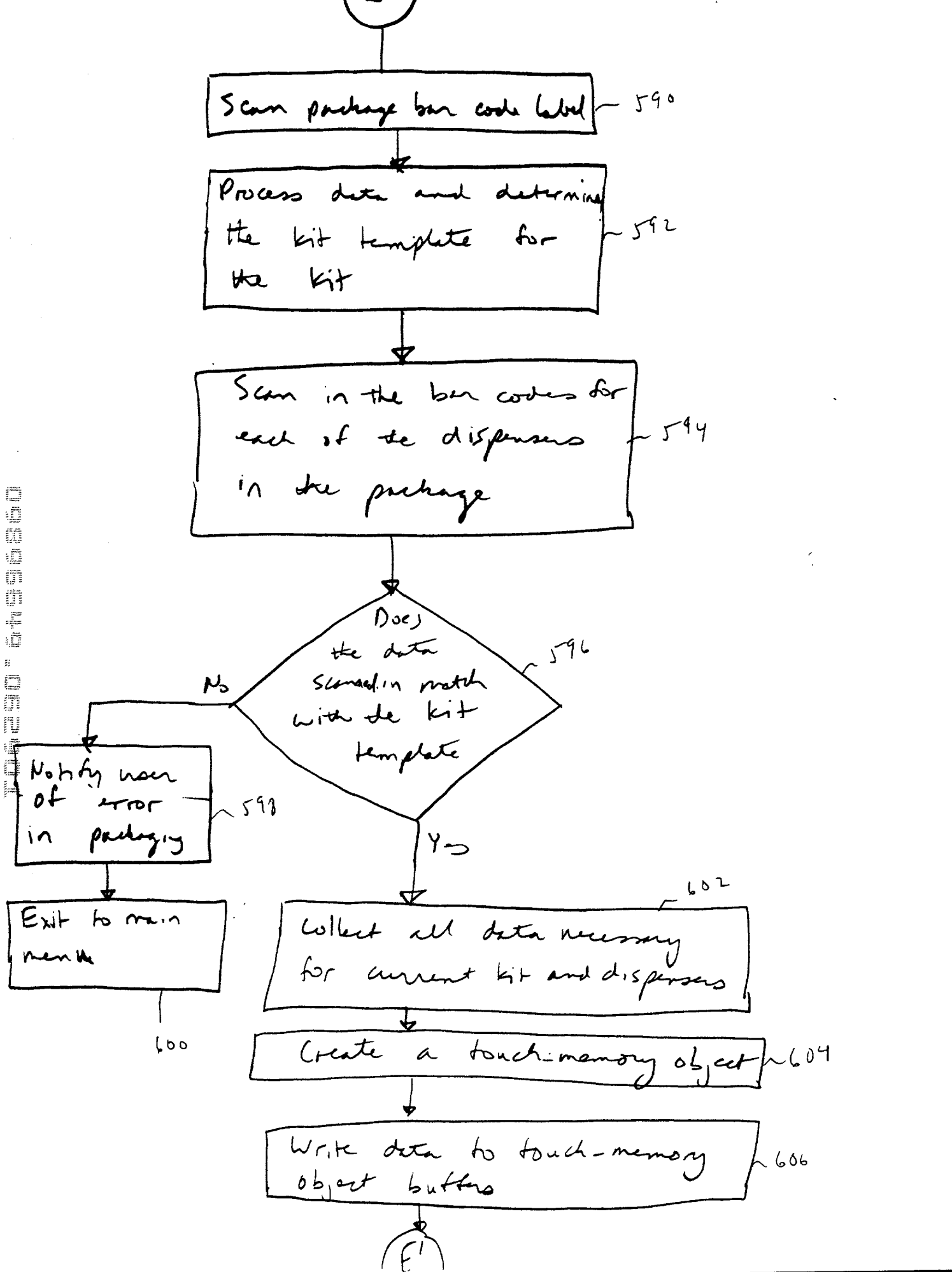


FIG 24





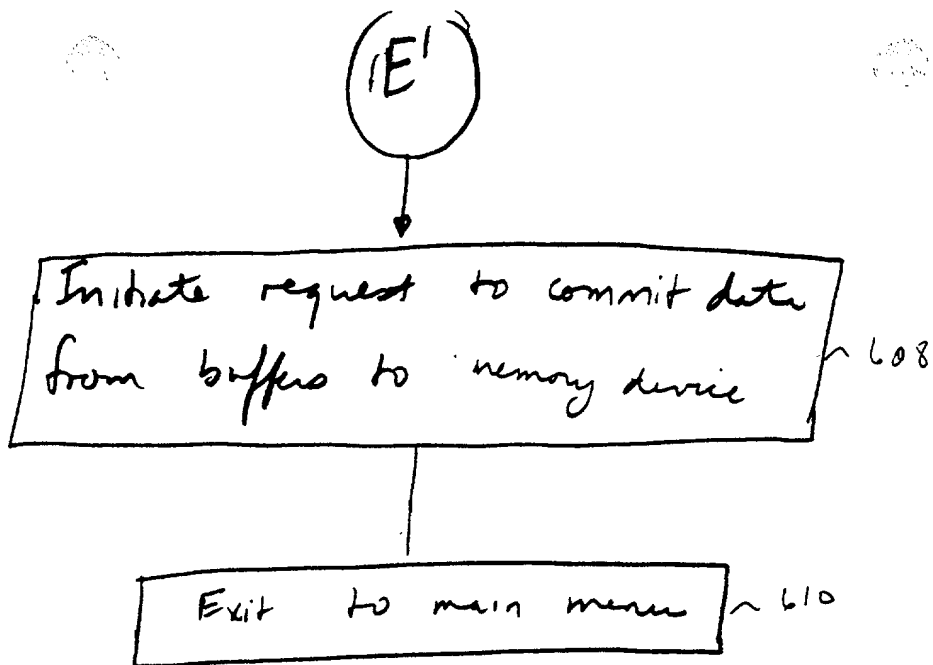
[illegible]



FIG. 25

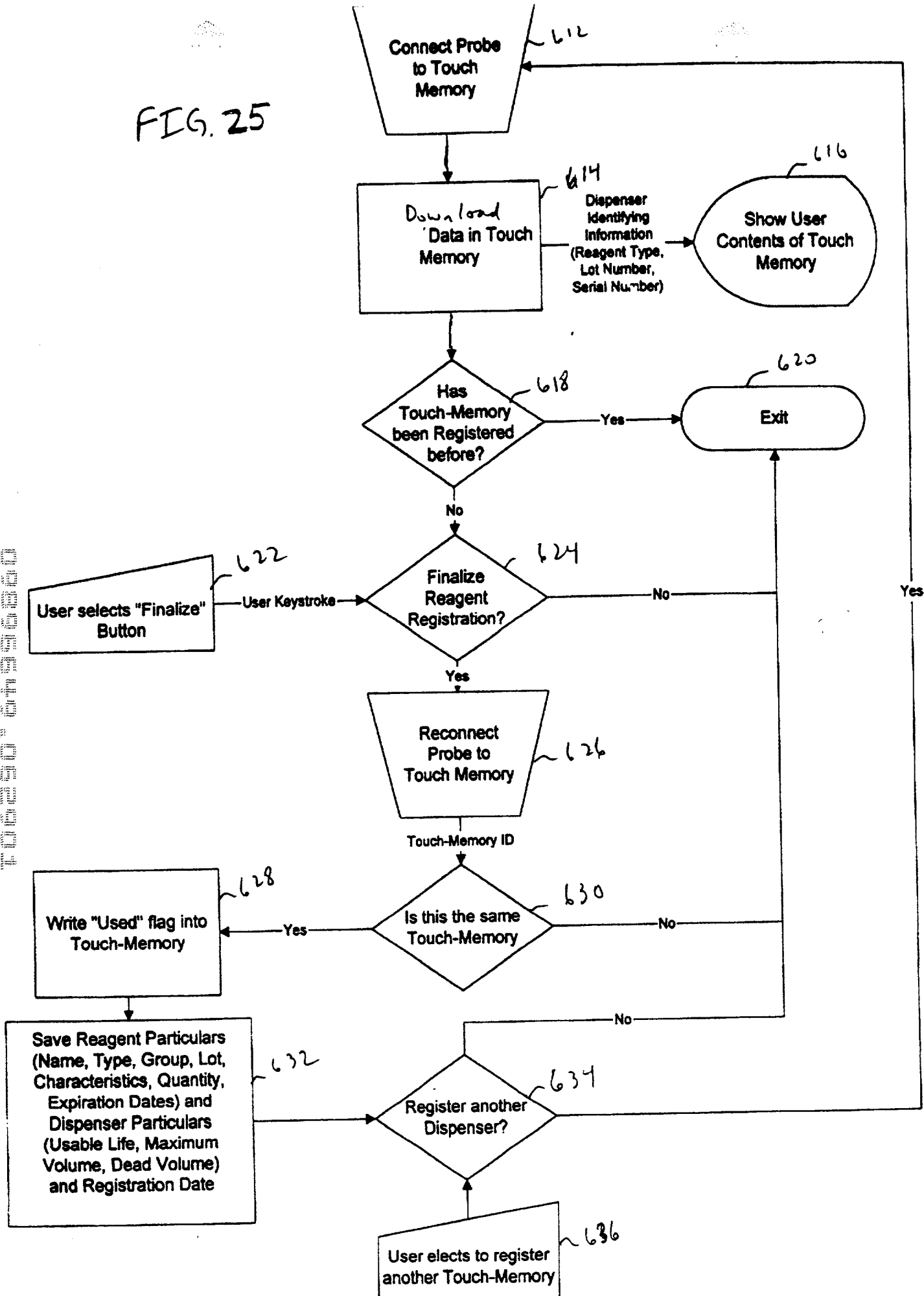


FIG. 26

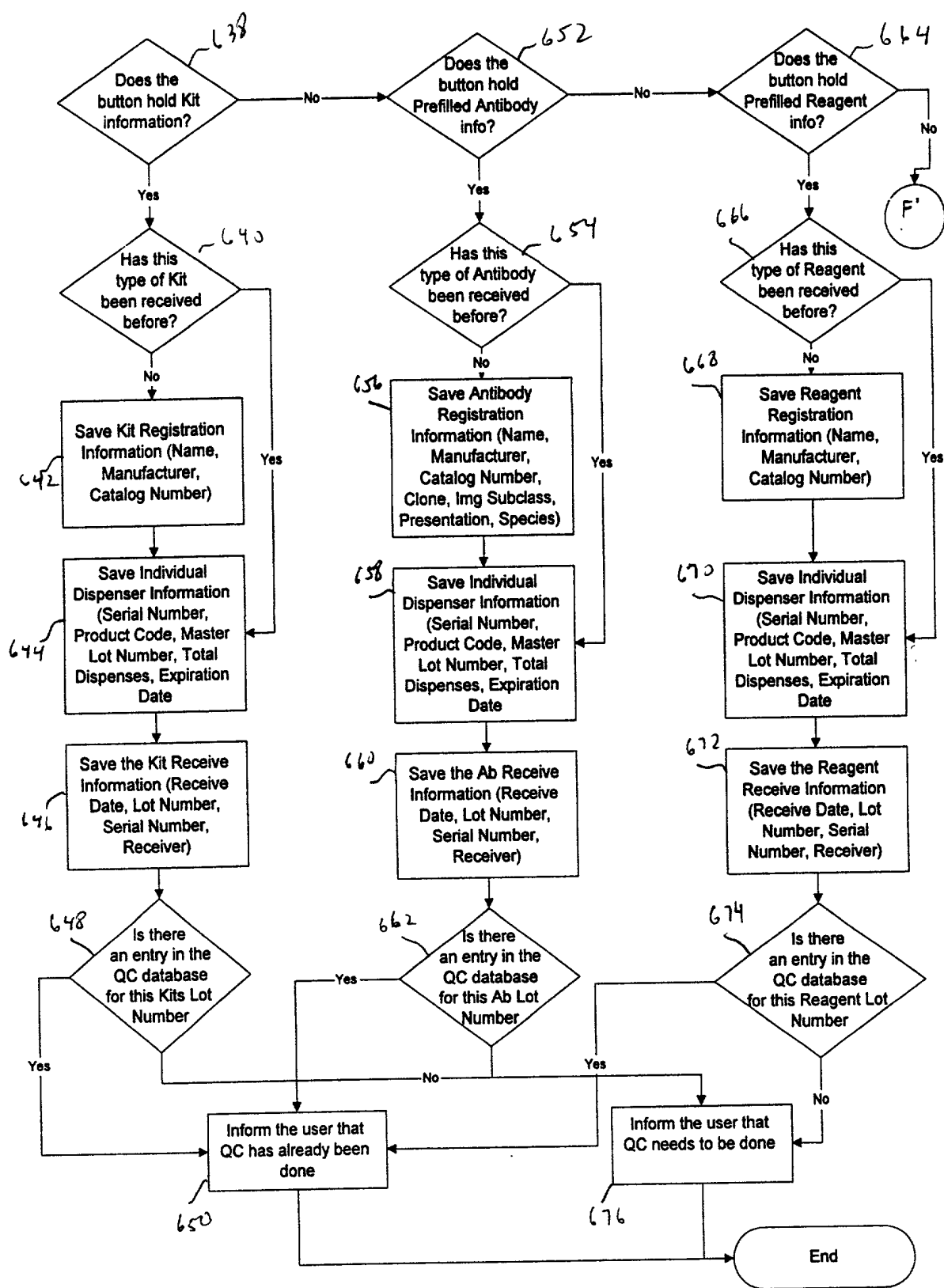
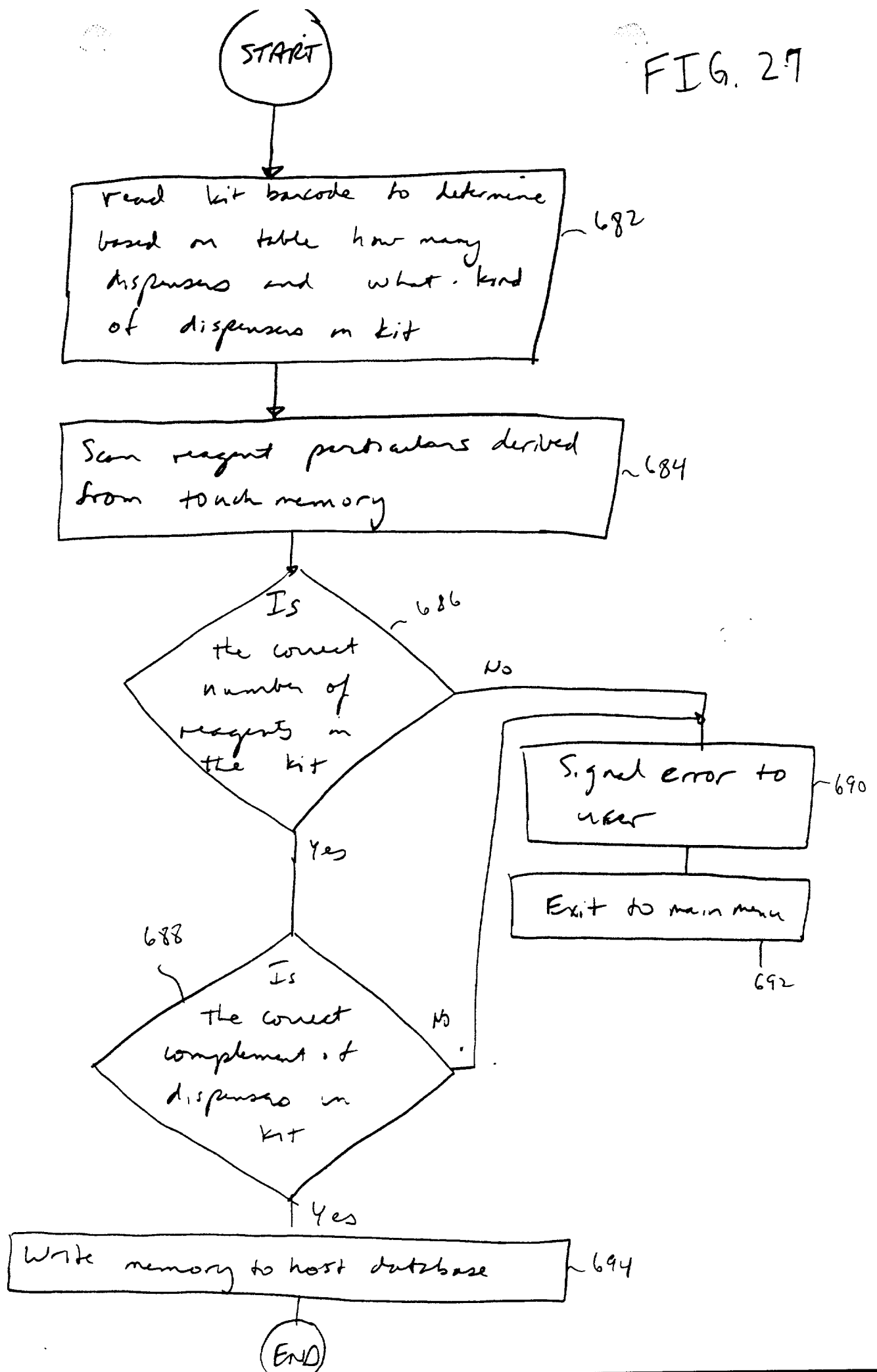




FIG. 27



(START)

FIG 28

Input the recipes and protocols for the slides 695

696

Host Device polls operator whether there is buffer, coverslip<sup>TM</sup>, space in waste tub. Host device also polls whether reagents are loaded and the number of slides

Download file of steps to read barcode on slides and to wait for host to retrieve barcode 697

read barcode on slide 698

store in file 699

Has Host received barcode and retriggered remote 700

Yes

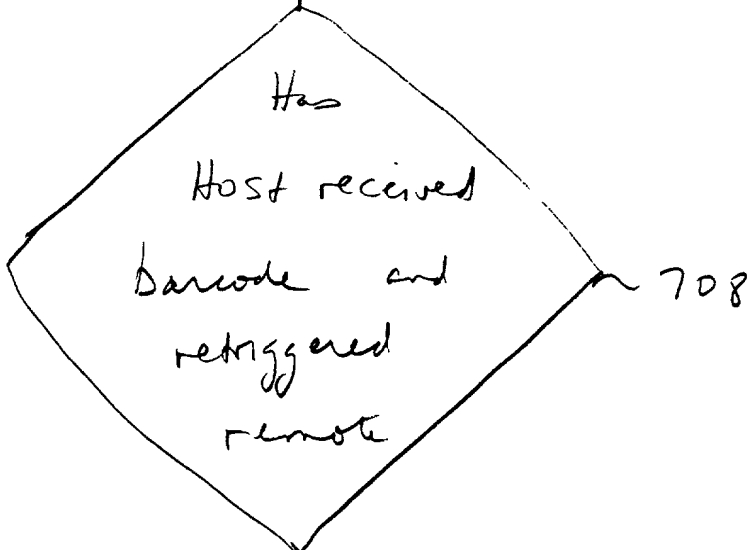
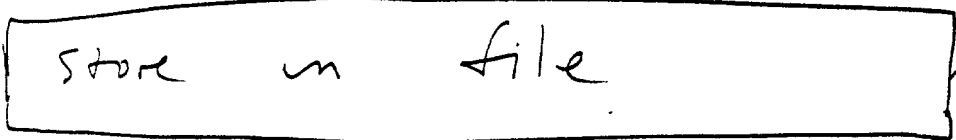
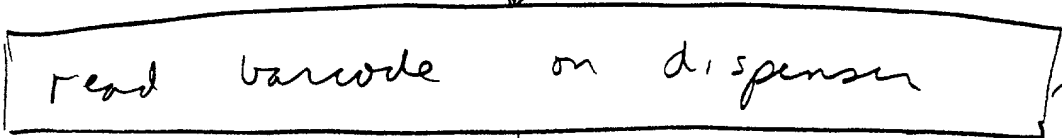
Last slide 702

No

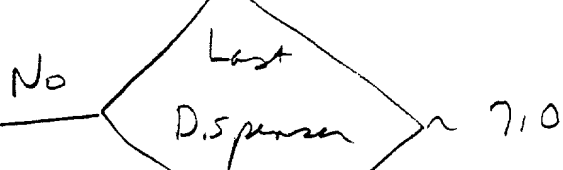
Yes

Download file of steps to read barcode on dispensers and wait for host to retrieve barcode  
Download run rules 704

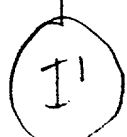
H'



Yes



Yes



FOR 249680

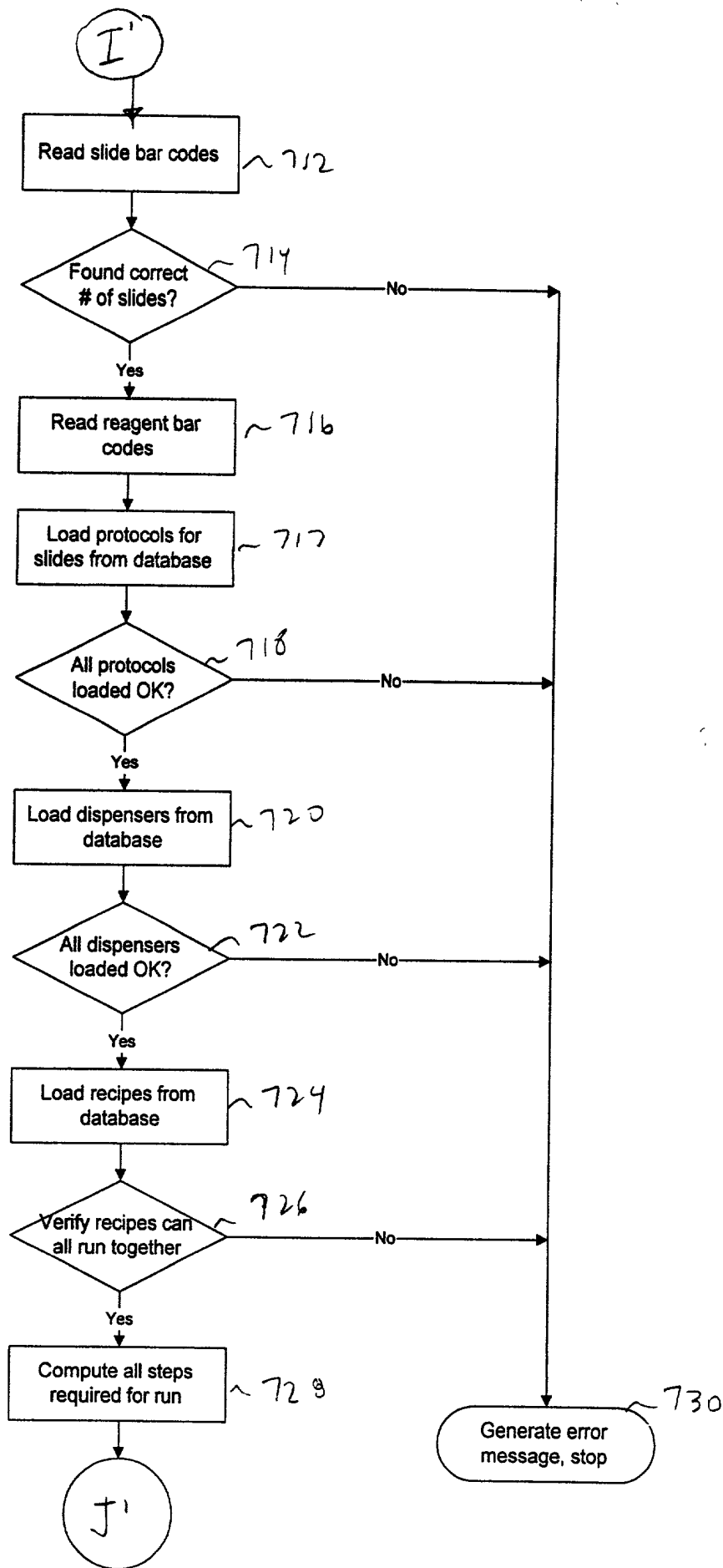
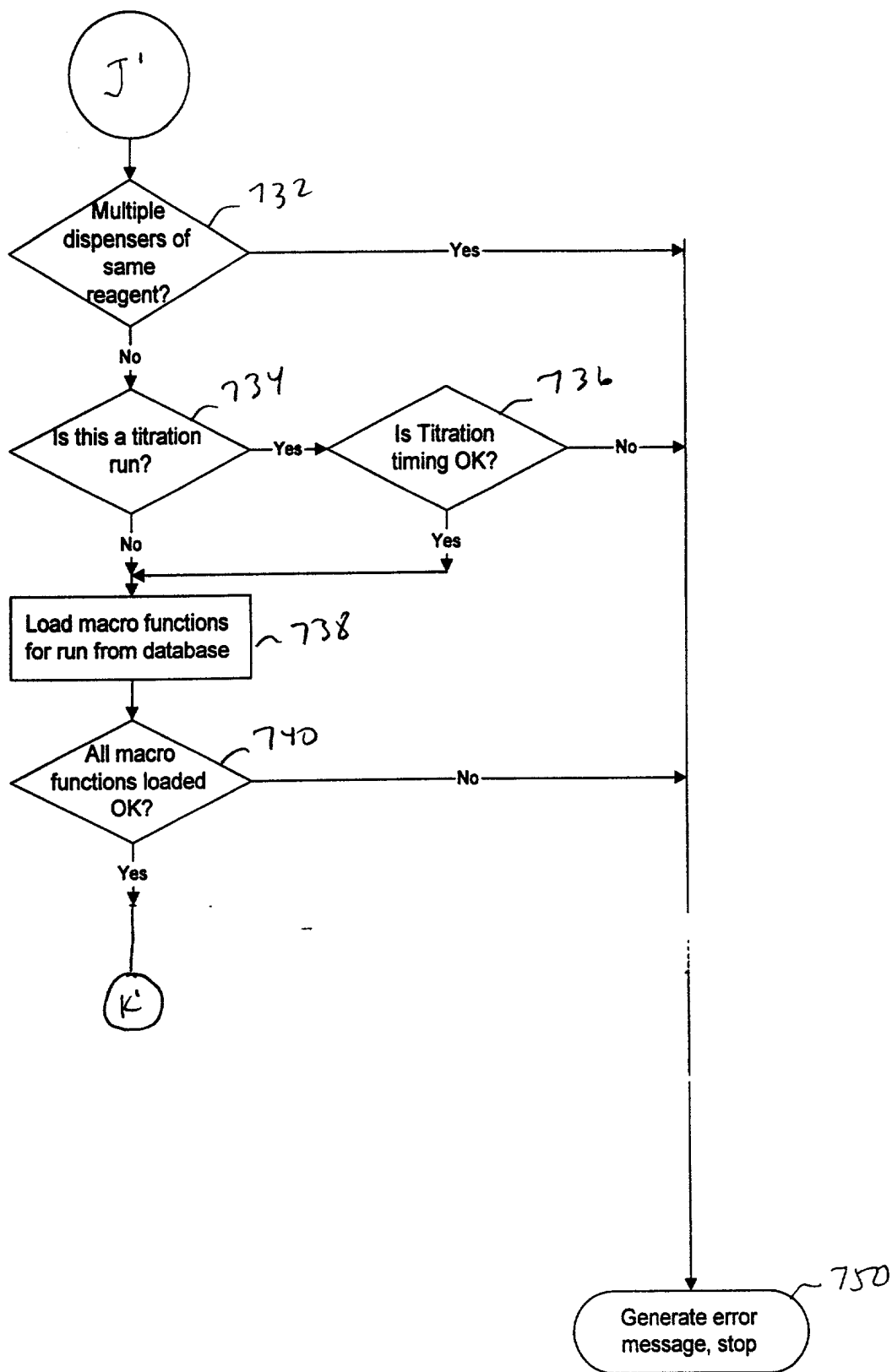
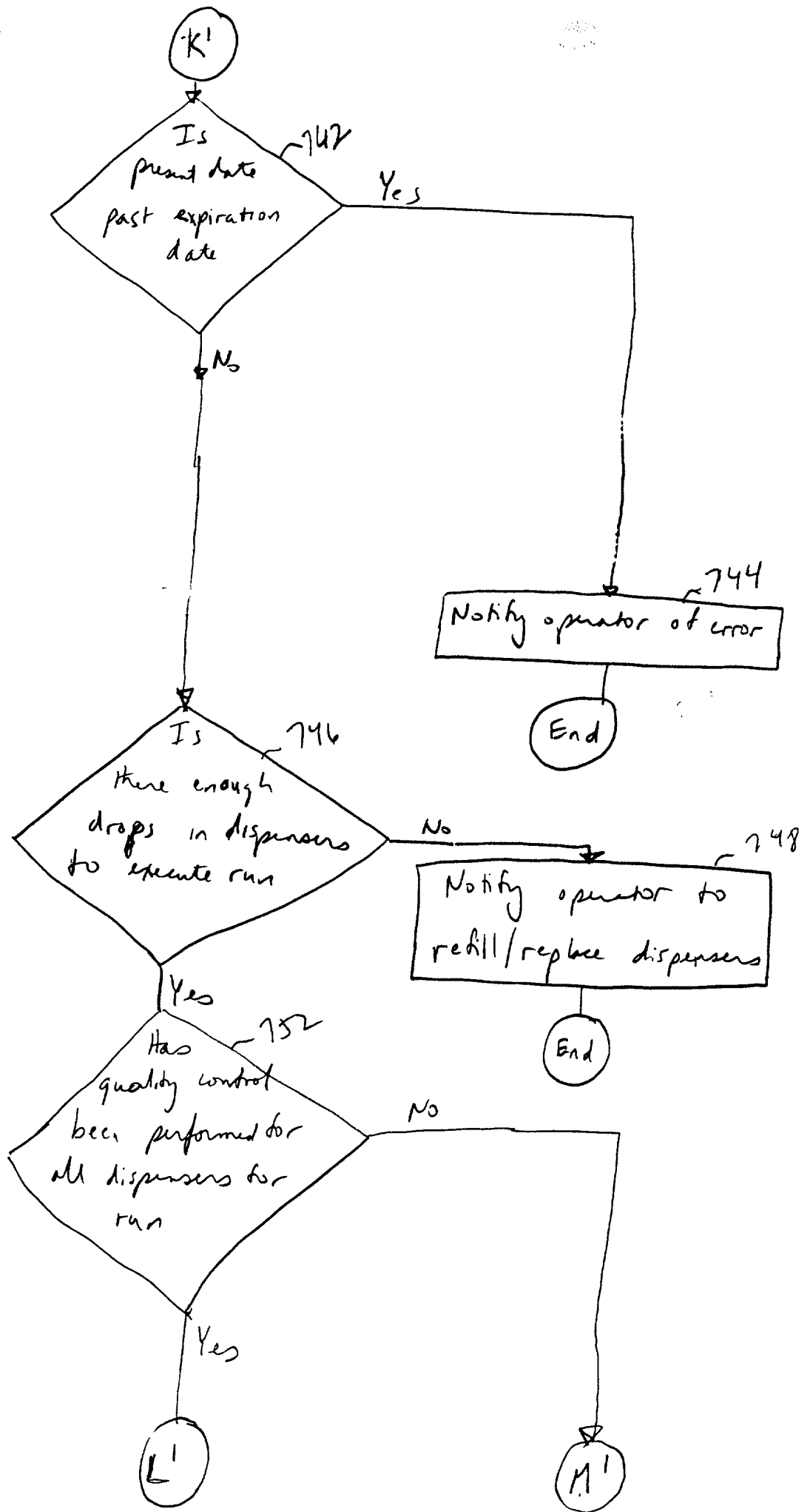


FIG. 9







L'

M'

Notify operator

Does operator wish to proceed

No

Ext

Yes

Prompt operator to enter name, date, and time to continue run

Note in history of run the quality control not checked and operator information

760

Save dispense data for run to database

762

Merge run rules together for run

764

N'

106390 6496360



FIG. 29

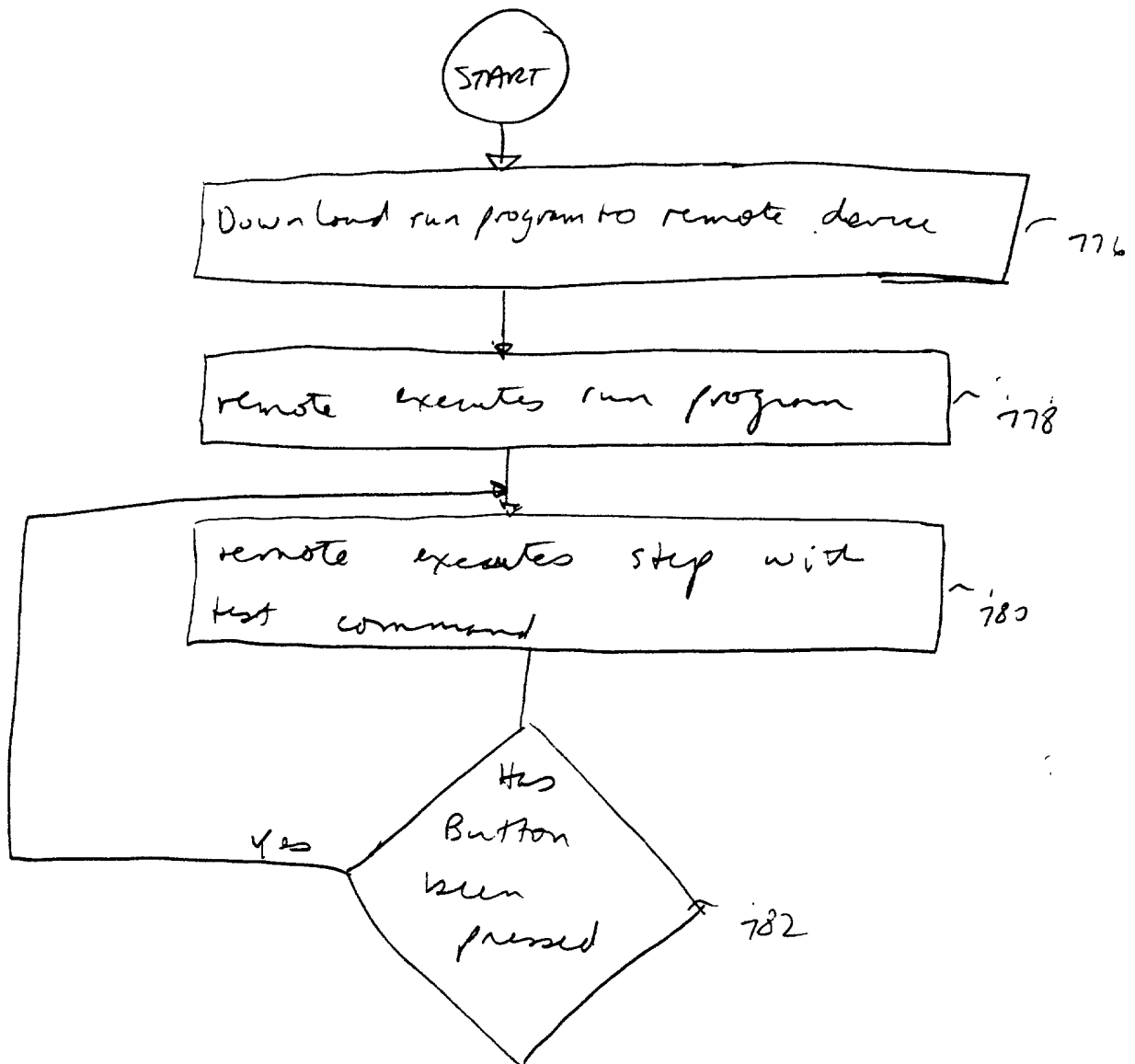


FIG. 29